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PhotoPlus THE CANON MAGAZINE

Issue 186 • Jan 2022

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Our understanding.

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They change the rules.

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PhotoPlus
THE CANON MAGAZINE

CANON GEAR FOR XMAS!
We've picked great Canon kit, cameras, and lenses ideal as gifts for loved ones, and yourself!
Page 28

Peter Travers
Editor

Welcome

After the year we've all had, it's nice to have Christmas to enjoy. A time for catching up with family and friends, for drinking and eating too much and, of course, spending too much! In our big guide this issue we have some great Canon gear ideas for Christmas presents, whether it's for your own wish list, or for that special someone, we have 77 gifts and stocking-fillers for those not on the naughty list. There's something for every budget with kit prices starting at less than £25, to more luxury items at over £500. See page 28.

Sticking with the seasonal theme, we have essential tips for taking great festive family photos with Canon portrait photographer Taylor Brady (page 50), and how to create your own Christmas collage with a festive wreath (page 56), ideal for printing or e-cards.

Our Apprentice spends a day with a Canon pro in the wild forests of Scotland learning to capture long-exposure shots of waterfalls, on page 8. We have more great photo projects and image-editing tutorials to keep you entertained in the darker evenings, with free video guides. Plus we speak to the incredible talent that is Canon Ambassador and professional F1 photographer Vladimir Rys, on page 60.

Also from page 68, Photo Stories, a wildlife photographer's choice kit, and more essential advice and in-depth techniques in Canon School. Plus we test eight different lighting kits, from studio flash lighting to location and LED lighting, on page 88.

If you're not a *PhotoPlus* subscriber already, turn to page 38 to join our Canon crew and for a great Christmas subs offer – big savings plus get a FREE camera backpack worth £70!

Christmas subscription offer and gift!
Subscribe and save on print and digital editions + get a free Lowepro backpack worth £70! **Page 38**

OUR GUARANTEE

- We're the only photo magazine in the newsagent that's **100% DEDICATED TO CANON EOS CAMERA USERS**, so we're 100% relevant to your needs.
- **WE'RE 100% INDEPENDENT**, which means we're free to publish what we feel is best for **EVERY CANON DSLR OR MIRRORLESS PHOTOGRAPHER** – from beginners to enthusiasts to full-time professionals.
- We're **CANON ENTHUSIASTS** and, with our contributors, we can offer years of **EXPERT PHOTOGRAPHY EXPERIENCE**. We're always excited to pass on what we've learned.
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- Our Video Disc has **THE VERY BEST DSLR TECHNIQUE & PHOTOSHOP VIDEO GUIDES**, which can also be viewed via our digital editions.
- We're proud to use **THE WORLD'S TOP CANON PHOTOGRAPHERS** and experts. Meet them on page 6.

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Meet the team...

PhotoPlus
THE CANON MAGAZINE

Who we are and our favourite articles inside this issue...

Peter Travers
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"It's been a pleasure to put together this festive issue with top gear gift guides to seasonal portraits, plus Scottish scenic photo skills to lighting kits tested. Enjoy!" **PAGE 88**

James Paterson
Technique writer • 5D Mark IV
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"I use a fibre-optic brush to create abstract light-painted portraits with beautiful neon colours. Find out how by following my step-by-step guide." **PAGE 44**

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"I headed up to Scotland, which was in Autumnal bloom, to pair up reader Emily with landscape pro Nick Hanson to learn to take fantastic waterfall imagery." **PAGE 8**

Matthew Richards
Technical writer • R6
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"It's beginning to look a lot like... You know the rest! I've picked 77 great kit gift ideas for your Christmas wish list this issue. Canon gear at all price ranges, from only £25." **PAGE 28**

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Mara Leite
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Taylor Brady
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Vladimir Rys
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Jayne Bond
We take a look inside the kit bag of seasoned wildlife photographer Jayne to see her top kit picks. **PAGE 72**

Marcus Hawkins
It's time to get the most out of your Canon-fit lenses, as Marcus takes a deep dive into optic options. **PAGE 74**

Brian Worley
Brian shows how to utilize the new Lightroom updates, and answers more of your Qs in EOS SOS. **PAGE 78**

Our contributors Ben Andrews, Peter Baker, Jayne Bond, Taylor Brady, David Clapp, Nick Hanson, Marcus Hawkins, James Paterson, Vladimir Rys, Matthew Richards, Emily Shardlow, Keith Wilson, Brian Worley

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Renew your subscription email **help@mymagazine.co.uk**
Customer service **0330 333 4333** or visit **www.mymagazine.co.uk**
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Printed by
William Gibbons

Distributed by
Marketforce, 5 Churchill Place, Canary Wharf, London, E14 5HU **www.marketforce.co.uk Tel: 0203 787 9001**

Photo Plus (ISSN 1754836) is published monthly (with an extra issue in March) by Future Publishing, Quay House, The Ambury, Bath, BA1 1UA, UK.
The US annual subscription price is $181.87 Airfreight and mailing in the USA by agent named World Container Inc., c/o BBT 150-15 183rd St, Jamaica, NY 11413, USA
Application to Mail at Periodicals Postage Prices is Pending at Brooklyn NY 11256. POSTMASTER: Send address changes to Photo Plus, World Container Inc., c/o BBT 150-15 183rd St, Jamaica, NY 11413, USA
Subscription records are maintained at Future Publishing, c/o Air Business Subscriptions, Rockwood House, Perrymount Road, Haywards Heath, West Sussex, RH16 3DH, UK.

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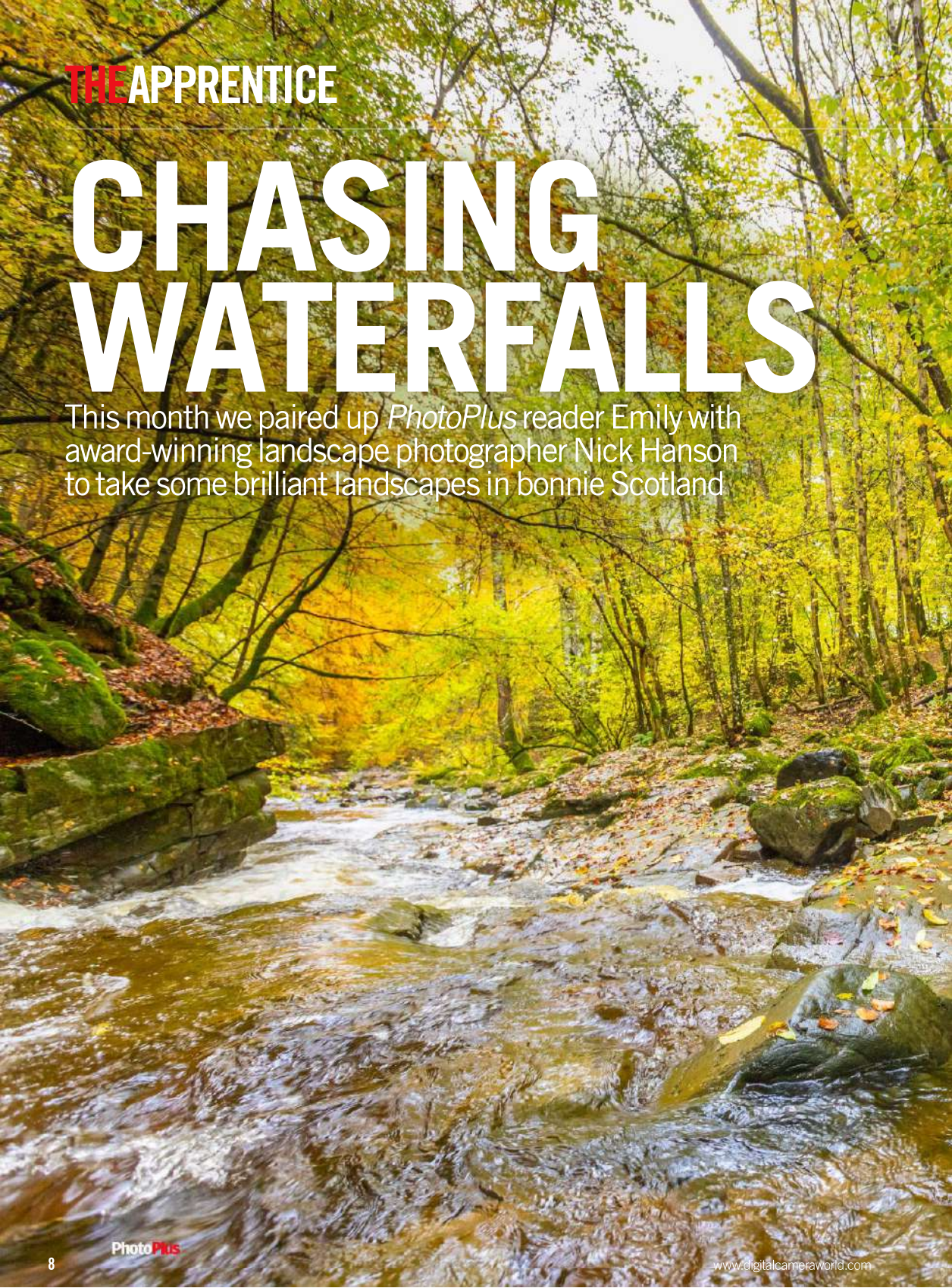
WHITE WALL

CHASING WATERFALLS

This month we paired up *PhotoPlus* reader Emily with award-winning landscape photographer Nick Hanson to take some brilliant landscapes in bonnie Scotland



CANON PRO

NAME:

NICK HANSON

CAMERA:

CANON EOS R5

NICK HANSON is a Canon pro landscape photographer based in the Isle of Skye in Scotland. He leads photography workshops, tours for Skye Photo Academy and is an award-winning landscape photographer. This experience makes him the perfect person to give reader, Emily, some top tips and advice on how to shoot landscapes and waterfalls for our photoshoot in Dunkeld, Scotland. **www.nickhanson.co.uk**

APPRENTICE

NAME:

EMILY NOAKES

CAMERA:

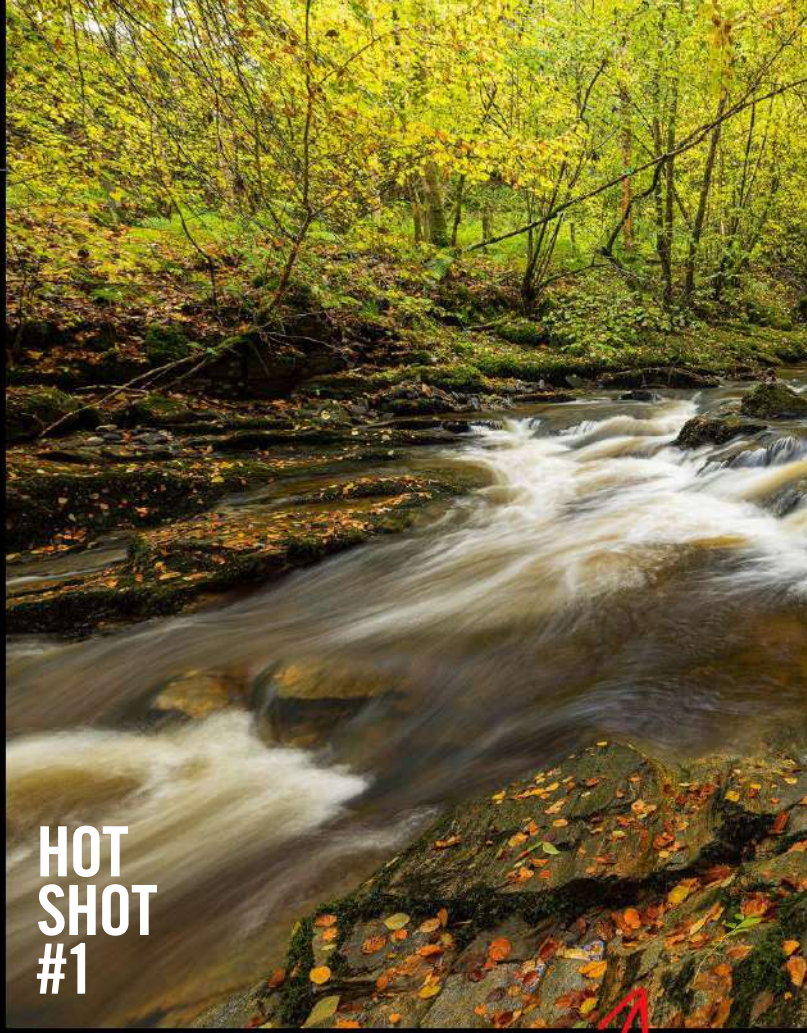
CANON EOS M50

EMILY IS a 70 year old retired office manager from North East Fife who has recently upgraded to a mirrorless Canon EOS M50. She's been taking pictures since 2004 and is the president and treasurer of St Andrews Photographic Society. She has a passion for shooting the beautiful coastline close to home but struggles to get the best out of her camera, so we've paired her up with leading Scottish landscape photographer Nick Hanson for the day.

THE APPRENTICE

NICK'S COMMENT

Our first location was the The Birks of Aberfeldy, a woodland setting with beautiful streams and waterfalls running throughout. A short walk took us to this fantastic viewpoint looking up the river, cascading over the rocks. Spiked feet on my tripod help me dig it into the rocks for stability, and I used my Canon RF 15-35mm F2.8L IS USM lens to get a wide perspective to include the river, trees and distant bridge. An aperture of f/8 gave me fantastic clarity throughout the frame, while a shutter speed of 0.8 sec was enough to inject motion into the water. I focused a third of the way into the scene to make sure the whole landscape was sharp and enabled the 2-Sec Self timer before firing off the exposure.



HOT SHOT #1

EXPERT INSIGHT

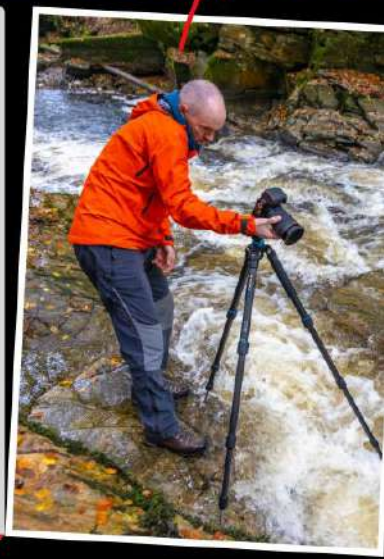
SHALLOW DEPTH OF FIELD SHOTS

ADDING SOME foreground interest is a great way to anchor your landscapes and ensure that there is something eye-catching in the bottom third of the frame to draw the eye in. In this waterfall shot we had a rock in the foreground with a slightly out of focus waterfall behind. By adding a bright yellow leaf to the rocky foreground we've instantly made it much stronger, as the vibrant yellow leaf really pops out.

TOP GEAR #1

Full-frame mirrorless EOS camera

NICK HAS been a complete convert to Canon's mirrorless system and now uses an EOS R5 body with mostly native lenses, such as his Canon RF 15-35mm F2.8L IS USM and RF 70-200mm F2.8L IS USM. In addition to landscapes, Nick is also an avid wildlife photographer so his EOS R5's in-body Image Stabilisation, 45Mp full-frame sensor, 20fps burst mode with silent shutter and 4K video at up to 120fps come in very handy for both landscapes and wildlife!



TECHNIQUE ASSESSMENT

Nick sets up his and Emily's cameras ready to take some fantastic waterfall imagery

STARTING SETTINGS

TO BEGIN, Nick put Emily's camera into Manual mode, so she could take full control of her Canon EOS M50. She also set the aperture to f/11 for decent sharpness and the ISO to 100 for best image quality and set up on her tripod to enable long exposures. She also turned on Raw shooting to capture more exposure data and switched on the 2-Sec Self-timer mode, ensuring that she wouldn't knock the camera as she pressed the shutter button, which could cause camera-shake.

CHECK THE HISTOGRAM

NICK SHOWED Emily how he uses the histogram when composing his shots to make sure that all of the tones in his images come out perfectly. The white histogram shows an overall mixture of tones: bunched up on the left means the image is underexposed and on the right would mean it's overexposed. Nick is more interested in the RGB histogram underneath, which shows if any tones in the Red, Green and Blue channels are clipping so he can tweak his exposure accordingly.

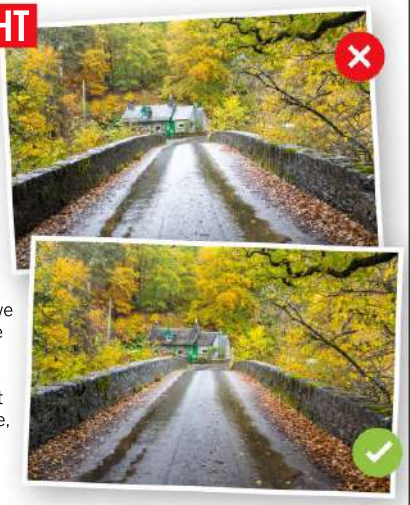
PRO TIP

COMPOSE WITH YOUR PHONE

NICK TENDS to use the camera on his phone to quickly see if a scene will work compositionally for him. It can look very different on an LCD screen compared to the naked eye. Setting up his tripod, camera and filters is time-consuming, so a quick look with his phone's camera tells him whether or not a shot will work. He also regularly uses the different aspect ratios on his phone to see if a landscape will work best in 4:3, 16:9, 1:1 and so on.

EXPERT INSIGHT

USE A POLARIZER



POLARIZER FILTERS are essential for landscape photography as they help remove scattered light from your scenes. This is especially useful on rainy days, like we were shooting on, as there are a lot of reflections on the ground and leaves. This helps cut down bright reflections, as well as glare, and helps boost the colours in the scene for better landscape shots.

THE APPRENTICE

HOT SHOT #2

Lens	Canon EF-M 18-55mm f/3.5-5.6 IS STM
Exposure	2 secs, f/11, ISO100

EMILY'S COMMENT

"Walking further down the path I was able to find a good angle looking down the river from the bank. I used the wide end of my 18-55mm kit lens to fit as much of the brilliant scene as I could into frame, I wanted to make sure this pretty rock littered with vibrant autumnal leaves was included in my composition to add some eye-catching foreground interest. I also used my polarizer to reduce glare on the wet rocks and borrowed some of Nick's Neutral Density filters so I could get a long exposure of two seconds. This had the wonderful effect of turning the water into a silky smooth mist and I made sure that the tones in the rest of the shot were correctly exposed too."

TOP GEAR #2

Carbon fibre tripod

A TRIPOD is essential for landscape work. It not only helps you eliminate camera-shake from hand-holding your camera, it also enables you to use slow shutter speeds to turn moving elements within the frame, such as water or clouds, into an ethereal blur. You can also take your time to perfect compositions. Nick's tripod of choice is a carbon fibre Benro TMA38CL Mach3, which he's paired with a Benro G2 ball head for rapid composing. On top of that, he uses spiked feet, which help dig into the ground, sand or rocky terrain for superior stability.

PRO TIP

TRIPOD MAINTENANCE

TRIPOD LEG lever locks can come loose over time, so Nick always has a multi-tool in his kit bag with various hex keys on it that he can use to nip up parts that are a problem. This keeps your tripod in tip-top condition, so that the legs won't slip during long exposures which can make images appear soft. Nick noticed that Emily's tripod was slipping in some of her exposures, so gave it a quick tighten to make sure it was solid as a rock.

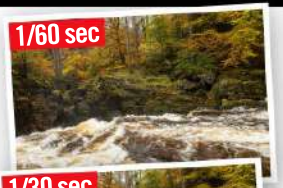
TOP GEAR #3

Quality filters

THERE ARE some photo effects that simply cannot be replicated in post-production and that's the case when it comes to neutral density and polarizing filters. Nick uses high quality filters from Kase, and mostly uses circular polarizers to tame reflections and boost blues in the sky. He uses neutral density (ND) filters to slow down the shutter speed. Nick finds 10-stop ND filters a bit too overpowering and as such tends to stick with a 3-stop or 6-stop varieties as well as graduated ND filters.

EXPERT INSIGHT

SLOW YOUR SHUTTER SPEED



WITH YOUR camera locked off on a tripod you can slow your shutter speed to inject motion into moving elements within the scene, such as clouds or, in this case, the river. At 1/60 sec the water is very static and almost frozen in time, but slowing the shutter speed down to 1/8 sec has turned it into a much more exciting blur. You can slow your shutter speed down with a high aperture value (eg f/16), low ISO (eg 100) and ND filters (see left).

THE APPRENTICE

NICK'S COMMENT

"We walked into thicker forest and found this fantastic scene, full of brown brachen and punchy green leaves. As it was overcast, the light was flat, which made it easier to achieve an even exposure. I used my Sigma 50mm f/1.4 DG Art lens, it's an EF mount lens, so I use the EOS R-EF mount adapter on my EOS R5, but it's still incredibly sharp. I set up on my tripod with an aperture of f/8 and focused on the tree on the left to make it the focal point. I also set the ISO to 100 for the best image quality and this gave me a shutter speed of one second, which I was happy with as I was using a tripod and there wasn't very much wind to blow the leaves about in the frame."

HOT SHOT #3

Lens	Sigma 50mm f/1.4 DG HSM	Art
Exposure	1 sec, f/8, ISO100

EXPERT INSIGHT

USE AN L-BRACKET

NICK USES a SmallRig L-bracket on his Canon EOS R5, which allows him to quickly switch between portrait and landscape orientations, helping him compose rapidly before the perfect light disappears. An L-bracket also helps keep your tripod balanced and stable, as the weight from the camera is always coming from the top of the tripod.

EMILY'S COMMENT

"While driving around searching for the next location I saw a photographic opportunity out of the window of the van, so we safely pulled over to take a look. We had a great vantage point of this forest, which was packed with autumnal greens, browns, yellows and oranges and some mist had descended upon the trees adding oodles of atmosphere. We set up on our tripods and used our telephoto lenses, I was shooting on my Canon EF-M 55-200mm f/4.5-6.3 IS STM lens for my Canon EOS M, which, due to its cropped sensor, has a film focal length equivalent of 320mm when fully zoomed in. I think Nick got the better shot here, as he acted quickly to get a photo in the bag before all the mist vanished."

HOT SHOT #4

TOP GEAR #4
Telephoto lens

YOU MAY not associate a large telephoto zoom lens with landscape photography, but a long zoom lens can actually be very beneficial. Nick uses a Canon RF 70-200mm F2.8L IS USM lens for landscapes where it's useful to zoom in and pick out a specific part of a scene. It also helps to compress the scene, which makes it easier to bring attention to your focal point and cut out other distractions around the frame.

Lens	Canon RF 70-200mm F2.8L IS USM
Exposure	0.3 sec, f/14, ISO100

NICK'S TOP TIPS FOR LUSH LANDSCAPES

1. **Shoot Raw**
Enable Raw shooting to capture the full range of tones and exposure information that your Canon EOS is capable of.

2. **Invest in quality kit**
A cheap filter can degrade the image quality of even the most expensive lenses – don't skimp out!

3. **Keep your edits simple**
Nick is hesitant to do any heavy post-production and rarely even crops his images. Light adjustments to the exposure, white balance and sharpening are usually all that's required.

4. **Enter competitions**
Entering a photography competition is a great way to get your name out there and, hopefully, receive some constructive feedback. Though Nick suggests only to enter images that you truly believe have a chance of winning.

5. **Level up!**
The electronic level is a quick and handy tool built-in to many Canon EOS cameras now that will help you set the horizon straight in your images rapidly.

6. **Weather apps**
Check the weather ahead of your shoot so you know what lighting and conditions to expect and then pack accordingly.

7. **Take pic of your hand**
When taking a sequence of shots for focus stacking it's worth bookending the sequence with a snap of your hand. This will help you easily find the group later.

8. **Wait for rain**
Waterfalls look best when they're full, so make sure you shoot them when it has been raining recently for better pictures.

9. **Composition is king**
Really think about your framing. Take time to survey the scene, work out what to include in shot – as well as what to leave out – to retain a clear focal point.

10. **Go on a workshop**
Nick runs workshops in Scotland throughout the year, these are a fantastic way to get some 1-2-1 tuition. Find out more on **www.skyephotoacademy.com**

EXPERT INSIGHT

MOPPING UP WATER SPLASHES ON LENSES

NICK USES Canon bodies and optics with professional weather sealing, which means he can shoot in a downpour, safe in the knowledge his kit is protected. He carries a large microfibre towel to pat down and mop up heavy rainfall on his kit, so it doesn't fog up in his kit bag. Nick also keeps a smaller microfibre cloth handy to wipe away any splashes on his filters when shooting waterfalls, as these could result in soft-looking images.

PRO TIP

SPARE BATTERIES

LONG EXPOSURES and cold weather can take their toll on Li-ion batteries, so Nick always carries a few spares with him. He uses a battery pouch and a system so he know's which to use next – he makes sure those still in their yellow protective casings are fully charged and ready to go.

EMILY'S COMMENT

"I loved how the forest floor was covered in red leaves, which gave this scene an autumnal vibe and helped balance out the bright yellows and greens in the forest canopy. There was some exposed mossy rocks in the foreground – I wanted to use these as a lead-in line, while the tree on the right of the frame would be the focal point. I carefully adjusted the composition until I'd struck the right balance between foreground, background, river and trees. Using one of Nick's ND filters I was able to achieve a long exposure of 20 seconds to blur the water beautifully."

TOP GEAR #5

Wide-angle lens

AFTER UPGRADING to his EOS R5 mirrorless, Nick decided to invest in Canon's RF 15-35mm F2.8L IS USM wide-angle lens, rather than use an adapter with his EF wide angle. Nick has found the new native RF optic to be a fantastic investment, as it's razor sharp. He says if he could only take on lens on a shoot it'd be this, as it's super wide and has a fast f/2.8 maximum aperture.

NICK'S TOP 3 SHOTS

Nick's favourite three landscape images

ATOP THE HILL

WHEN I first discovered the scene I envisaged a shot with it covered in snow and sheep underneath the trees, as on my first encounter they were there. After a decent overnight snowfall last winter my shot became a reality!

CRAIGELLACHIE AUTUMN

CRAIGELLACHIE NATURE Reserve in Aviemore always produces good images and on this outing I got something a bit more special... With soft light hitting the trees and grasses, creating an image that I can stare at for ages.

QUIRAING FLOW

LIVING SO close to the Quiraing on Skye I've captured shots from many different viewpoints, but this is one which I had never got an image from before, as the waterfall isn't always flowing, so it's extra special to me.

HOT SHOT #5

Lens	Canon EF-M 18-55mm f/3.5-5.6 IS STM
Exposure	20 secs, f/11, ISO100

THE APPRENTICE

SHOT OF THE DAY!

EMILY'S COMMENT

Our last location was The Hermitage and we arrived at a little bridge over the River Braan where you can get an amazing perspective of the water cascading down the rocks. Putting everything I'd learned into practice I set up on a tripod and focused about a third of the way into the scene, then attached my polarizer to cut down on glare and to achieve a longer exposure. I set the ISO to 100 for the best image quality, an aperture of f/8 for good sharpness throughout, resulting in a shutter speed of 1/4 sec: slow enough to blur the waterfall. Thank you again *PhotoPlus* for the opportunity, I've learned so much and can't wait to put it all into practice at my favourite landscape spots back home.

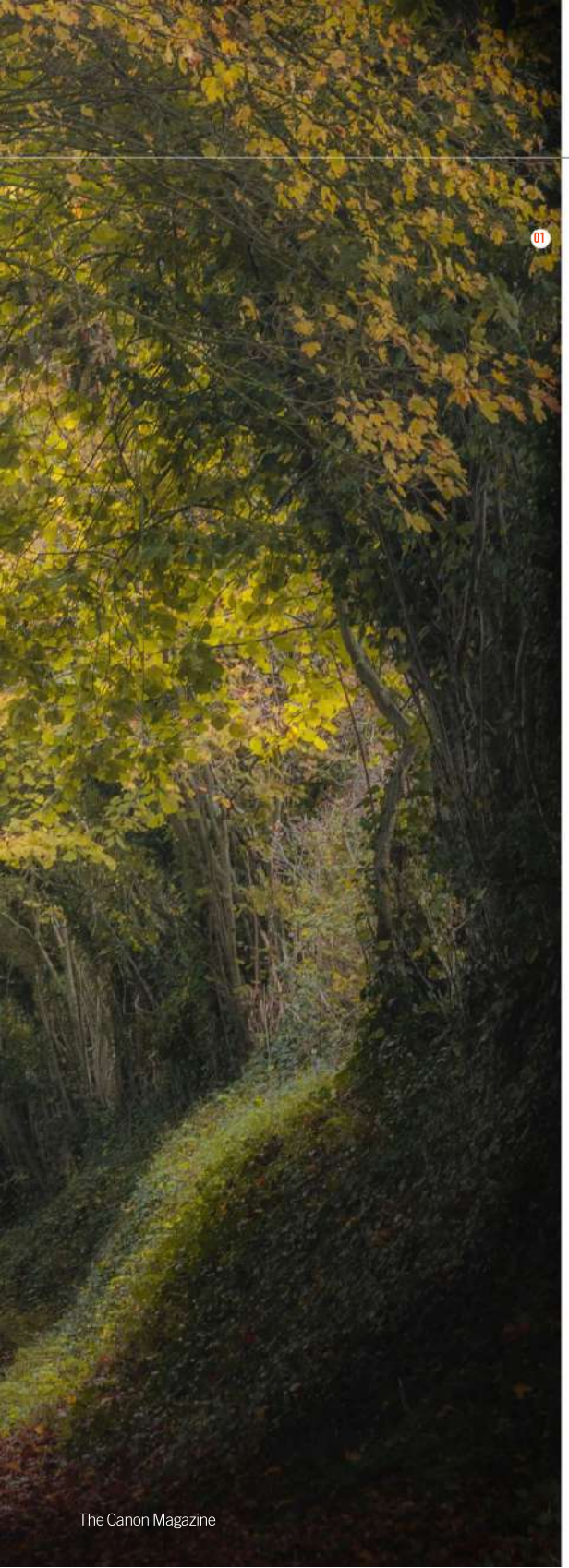
NICK'S VERDICT

Emily was a star pupil, took all of my advice on board and was able to take some stellar shots throughout the day. My only small critique would be that her kit bag is currently missing a really good set of high quality filters, and I think with some decent ND filters she'd be much better set up to take some fantastic landscapes. She's got a brilliant coastline to play with on her doorstep, back in North East Fife, so I'm positive that she'll have plenty of opportunities to practice and add even more stunning landscape photos to her portfolio.

Lens	Canon EF-M 18-55mm f/3.5-5.6 IS STM
Exposure	1/4 sec, f/8, ISO100

INSPIRATIONS

STUNNING LANDSCAPE IMAGES FROM THE WORLD OF CANON PHOTOGRAPHY



01 OVERALL WINNER MORNING AT COUNTRYSIDE BY MARA LEITE

Mara's incredible woodland shot was the Overall Winner in this years' Landscape Photographer of the Year competition. She told us, "Mill Lane is a famous footpath in Halnaker, West Sussex. I was looking for a different composition when I decided to turn the other way and saw this beautiful sight. I love the gate in the background and how the morning light is hitting the leaves and softly entering the tunnel." We agree! It's a beautiful sight, let alone capture on camera. Congratulations.

Lens	Canon EF 70-300mm f/4-5.6 IS USM
Exposure	1/60 sec, f/10, ISO800

02 CLASSIC VIEW HIGHLY COMMENDED GOLDEN ROCKS BY JAMES EWER

James was awarded Highly Commended in the Classic View category for his photo of Bat's Head cliff on the Jurassic coast in Dorset. He tells us, "After three visits on consecutive evenings I got the soft golden light I was hoping for. I wanted to achieve a long exposure to blur the crashing waves, so I closed my aperture down to f/8 and added a six-stop neutral density filter to slow the shutter speed to 3 seconds."

Lens	Canon EF 16-35mm f/4L IS USM
Exposure	3 secs, f/8, ISO100

LANDSCAPE PHOTOGRAPHER OF THE YEAR

The UK's prestigious annual Landscape Photographer of the Year competition, now in its 14th year, was founded by one the country's leading pro landscape photographer, Charlie Waite. Charlie has taken photos professionally for more than 50 years and is firmly established as one of the world's most celebrated international landscape photographers. The Landscape Photographer of the Year 2022 contest opens for entries on the 6 January and closes on the 5 May 2022. For more information visit www.lpoty.com

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03 B&W WINNER DAYBREAK BESIDE THE RIVER BRATHAY BY MILES MIDDLEBROOK

Miles took the top spot in the B&W category with this stunning landscape, taken on a misty morning from the River Brathay near Skelwith Bridge, Lake District. The reflections and bodies of mist add buckets of atmosphere to this photograph and he definitely made the right decision to go mono, as it makes it look even more contrast-rich and eye catching.

Lens	Tamron SP 85mm f/1.8 Di VC USD
Exposure	1/125 sec, f/7.1, ISO200

04 URBAN LIFE WINNER WALK DIAGONAL BY KAREN BRICKLEY

Karen came top in the Urban Life category this year with her image *Walk Diagonal*. She told us, "I had perfect blue skies and sunshine, which really showed off the art installation *Dance Diagonal*, by Lothar Götz on the Towner Gallery perfectly and brought it to life. I wanted to include somebody in the frame walking by, so I waited until the right moment and took the shot. I think that the person in the frame really helps show the scale of the artwork."

Lens	Canon RF 24–105mm F4L IS USM
Exposure	1/320 sec, f/5.6, ISO100

05 **CLASSIC VIEW HIGHLY COMMENDED**

FIRE AND ICE BY TONY GILL

Tony was Highly Commended for his image, *Fire and Ice*. He shot this photo on Quarr Hill in Dorset from a different perspective on New Year's Day. He explains, "This place has always felt familiar under my walking boots, but at the beginning of the year, with the world in the grip of a pandemic, it now felt alien and otherworldly. A hard frost and chance of mist had sent me high upon the Downs, as the dawn sky blushed with warmth yet the ground was still iron."

Lens	Canon EF 16-35mm f/2.8L II USM
Exposure	1.3 secs, f/16, ISO160

INSPIRATIONS

06 YOUR VIEW WINNER RUNNER AT DAWN BY ROBIN DODD

Robin took the top spot in the Your View category with his image *Runner at Dawn*. He told us, "I took this image on a misty morning near Henley On Thames. My nightly routine is to check my apps for morning mist or fog and shoot in the morning if the conditions look good. I set up opposite the towpath with a tripod and then start shooting as the mist and sun play out their show. I then blend the best of the movement with the landscape to give the viewer the same emotional vision I had when watching that stunning light show myself."

Lens	Sigma 100-400mm f/5-6.3 DG OS HSM I C
Exposure	1/8000 sec, f/8, ISO200

07

08

07 HISTORIC BRITAIN COMMENDED
DUNNOTTAR CASTLE TOMASZ ROJEK

This is an incredible panoramic scene of Dunnottar Castle that got Tomasz' image Commended in the Historic Britain category. He told us, "I took this photo during a trip to Scotland in May 2019. It's a panorama during sunrise where I took two rows of three images and stitched them together to create a more expansive perspective. I love how the man in the upper right corner shows the scale of the landscape."

Lens	Sigma 12-24mm f/4 DG HSM
Exposure	1/40 sec, f/13, ISO100

08 HISTORIC BRITAIN WINNER OUT OF THE DARKNESS BY MARK AMPHLETT

Mark's dark and moody shot of Kilchurn Castle got him the top spot in the Historic Britain category. He tells us, "It was a very overcast morning on Loch Awe, the forecast was for mist and I was hoping for a light covering around the lake, instead the whole area was covered in thick, low-lying cloud. I waited for around an hour, in the end my patience was rewarded as, suddenly, a tiny break in the cloud illuminated the castle and brought the whole scene to life – I couldn't have placed the light more perfectly."

Lens	Canon EF 24-70mm f/2.8L USM
Exposure	1/20 sec, f/11, ISO100

LANDSCAPE PHOTOGRAPHER OF THE YEAR

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09

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09 LINES IN THE LANDSCAPE WINNER
GLENFINNAN VIADUCT BY MALCOLM BLENKEY

Malcolm scooped up the winning image if the Lines in the Landscape category with his shot of the Glenfinnan Viaduct. He told us, "I was staying at Fort William in October 2019 when I knew the Jacobite steam train schedule would be visible on the fantastic Glenfinnan Viaduct. Most people shoot it from a high-angle perspective, but I liked this lower angle as, when the sun hit the snow-capped mountains in the background, there was a brilliant juxtaposition of the natural beauty of the location in contrast to the mighty man-made structure and steam train."

Lens	Canon 24–105mm f/4L IS USM
Exposure	1/400 sec, f/10, ISO800

10 YOUR VIEW HIGHLY COMMENDED WINTER LARCH BY TONY HIGGINSON

Tony achieved a Highly Commended award for his amazing Winter Larch landscape in the Your View category. He tells us, "I was standing with a friend in a whiteout blizzard and I was questioning my sanity, until I settled on this composition in which this wonderfully shaped larch sits with a distant fell just visible through the snow." We think it's minimalist, full of contrast and masterfully composed, so hats off to him!

Lens	Canon EF 24-70mm f/2.8 II USM
Exposure	1/60 sec, f/11, ISO100

10

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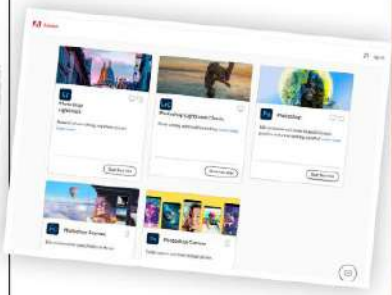

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Lens	Canon EF16-35mm f/4L IS USM
Exposure	30 secs, f/11, ISO400

Jersey's Nazi tunnels

St Brelade's Bay, Jersey. 06:30pm. September 2014

David and his good friend Andy explore abandoned underground tunnels on Jersey for a technical photo experience

Photography has taken me to some strange places over the last 20 years, but none so strange as a trip underground on the island of Jersey. On a whim, this exploration turned into an image that was truly magnificent, but on entering into this historical set, I literally had no idea what I was actually trying to achieve.

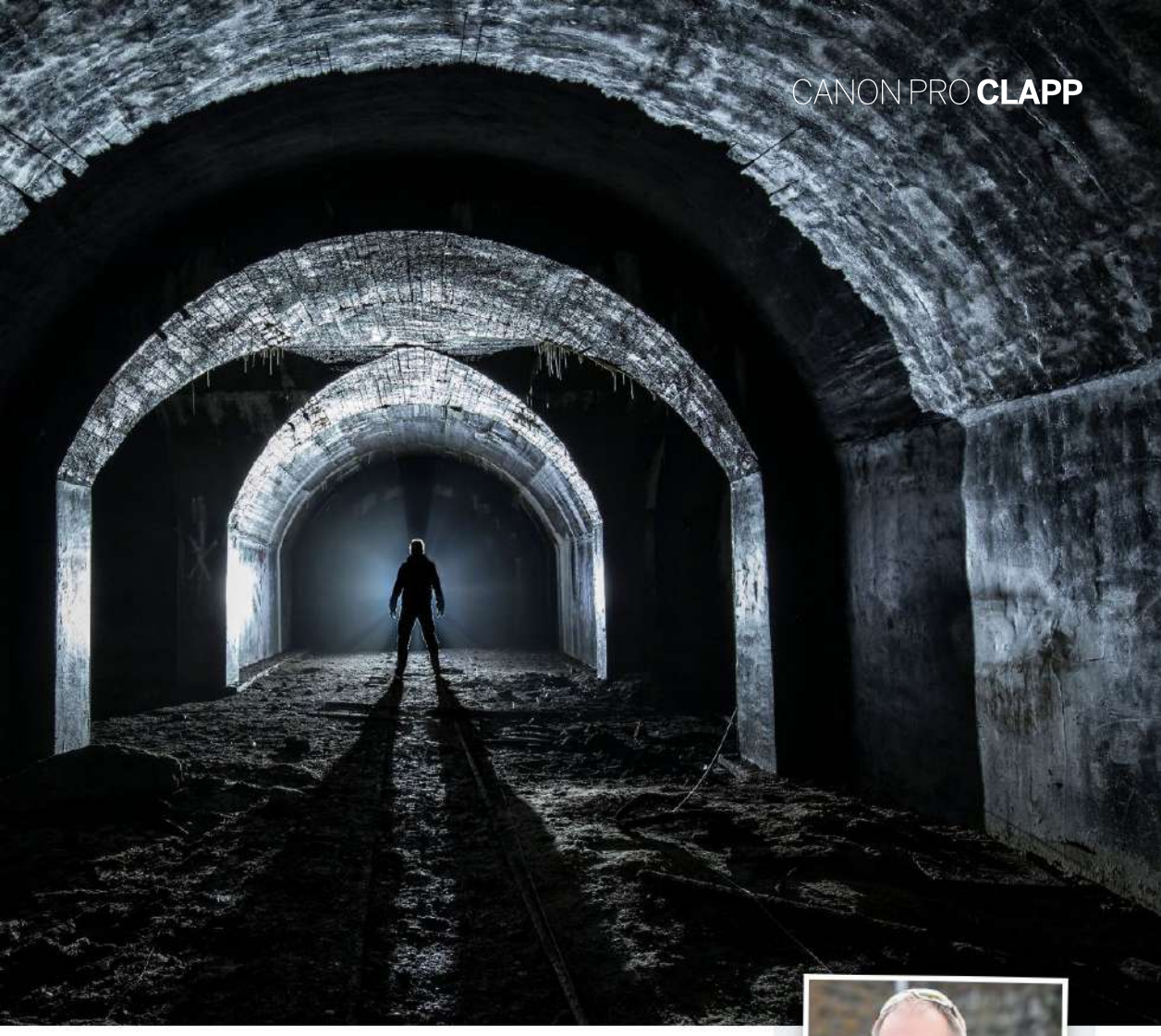
Andy and I have been best mates for years, since my 'non-workshops' idea took off in 2007 (couch-surfing to wonderful places in exchange for free photographic tuition). The first day we met, at St Brelade's Bay, windsurf trainer Andy moved my unzipped camera bag and dropped the entire bag contents onto the soft sand. We can laugh about it now, but at the time it was awful.

When Andy told me of these Hohlgangsanlage tunnels, the research began. These unfinished WW2 tunnels were intended to be used by German staff and house various bits of equipment, keeping them safe from aerial bombings. As we approach, I imagined finding old jeeps, rusting weapons and helmets, but after lifting the metal door panel and sliding under the entrance, it was evident there would be no chance of that. Wearing wellies and carrying torches, we enter HO2, a decaying munitions bunker.

After walking through tunnels, clambering over rocks and rubble, we reach a half-finished section of concrete and vaulted ceilings. I assemble my Canon EOS 6D and EF 16-35mm f/4L IS on my tripod, set the camera to 30 secs, f/11, ISO1600, and take a test shot, keeping my head torch still, so I can understand where we are. To my surprise, there is a lot of white goop hanging from the ceiling, as well as some rusty rails, likely for pushing carts of equipment.

With Andy standing at the other end, he flashes his torch in my direction – I have a brainwave. What this needs is a backlit figure, but how can we do this?

Since the EOS 6D, literally all of Canon's line up have Wi-Fi capabilities. I joke with clients that it's so you can get a better phone signal, but this superb method of remote control can control your camera from as far as 10 metres away. I enable Wi-Fi, open my iPhone and look for the wireless network that the Canon EOS 6D creates. I log in, open the Camera Connect App and can now fully control the camera.



"With Andy standing at the other end, he flashes his torch in my direction – I have a brainwave"

With Andy standing behind me, holding his head torch at waist-height, we tune the lighting effect. The camera is sending Live View directly to my phone, so we can move Andy's torch and watch the light interplay on the screen. If he moves further back from me, the shadows of my legs come together; too close and they confuse the photo's vanishing point.

I set the camera to 30 secs, f/11, and ISO400. In order to get myself into a Zen-like state, I choose a 10-sec timer. This gives me ample opportunity to bring my arm comfortably to my side and relax. The red light flashes and the shutter clicks. Why does time seem to take so much longer when you're counting in your head? We check the photograph and it's utterly remarkable!

Moments later we hear an almighty bang at the entrance of the tunnels… Our excitement turns to fear, we switch off the torches – it is blacker than you could ever believe. We hear voices. Making a rush to the light at the end of the tunnel, we slow our pace – four teenagers are standing at the gate – to put the fear into them, we unleash our best German infantry impressions! I haven't laughed so hard in a long time.

NEXT MONTH BODIAM CASTLE

DAVID CLAPP
Canon professional photographer

DAVID CLAPP FRPS has been a full-time professional photographer for the last 15 years and leads global workshops. An RPS judge, he undertakes commissions worldwide, works for Canon UK and is represented by Getty Images. Visit **www.davidclapp.co.uk** for a portfolio of inspiring photos and information on workshops.

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ALL OF OUR NEW PHOTO PROJECT AND IMAGE-EDITING VIDEOS CAN BE VIEWED ONLINE VIA THE WEB LINKS ON PAGES 44-59!

CanonSkills

Sharpen up your photography skills with our all-new photo projects and expert guides

Dan Mold
Technique editor
dan.mold@futurenet.com

Welcome...

CHRISTMAS IS just around the corner and we've been getting into the festive spirit here at *PhotoPlus* HQ. Check out my project on page 48 where I show you how to turn the lights on your Christmas tree into fantastic bokeh using a Lensbaby and freelensing, or take beautiful festive family portraits at home with Taylor Brady on page 50. James has been busy creating abstract portraits using fibre-optic lights and editing skills in this month's big project, starting on page 44. If you'd rather brush up your post-production, we've got you! On page 54 we run through some tips to banish lens defects for good and make sure your pictures are at the top of their game. We also show you how to merge your photos this festive season into a festive collage that is perfect for Christmas cards, and on page 56 you'll learn how to get brilliant results with a retro-inspired double-exposure effect in Affinity Photo (page 58).

New projects with video guides

Follow our Canon camera walkthrough guides and Photoshop editing videos

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Create brilliant portraits with our abstract fibre-optic lighting skills

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Achieve amazing bokeh with a Lensbaby Spark and freelensing

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Turn your Christmas pictures into an artistic festive wreath collage

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Take beautiful festive family photos: they make lovely Xmas cards

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Banish chromatic aberration quickly with our fast editing tips

58 Double images
Craft a narrative with vintage-inspired double exposures

VIEW THE VIDEOS

WHENEVER YOU see this icon you'll find an accompanying video to watch online so you can follow along. You can view the videos on a smartphone, tablet or computer. See the links on the project pages.

THE MISSION

Use a fibre-optic light brush and torch to create colourful portraits

Time needed
45 minutes

Skill level
Intermediate

Kit needed
- Tripod
- Torch
- Coloured gels
- Black backdrop
- Fibre-optic light brush

Abstract light-painted portraits

Paint incredible portraits using a fibre-optic brush with **James Paterson**

Light painting isn't a technique you'd normally associate with portraiture, but with a few simple skills you can create fantastically surreal people photos. You don't need lots of gear for this either, just a tripod, a dark room, a willing subject, and a torch or other light-emitting device you can use to 'paint' with.

When it comes to choosing a light source for your painting, there are all sorts of torches, light wands and dedicated tools out there. But one of the most interesting is a fibre-optic brush. This is a technique inspired by the portraits of Gunnar Heilmann, who uses a fibre-optic light brush to incredible effect. The fibres split the beam from a normal torch into lots of tiny points of light that look wonderful when brushed and flicked over the course of a long exposure. We bought our brush from rigu.co.uk for only £25.

Painting with the brush is rather addictive, as you can get a variety of results depending on whether you stroke across the face, dab it onto the skin or shine the light around your subject.

Whether capturing faces or any type of subject, the basics of light painting are the same. We'll show you how to get set up for light painting by choosing the right exposure settings and controlling the light. It's a fun technique that's perfect for a dark evening at home. Although you might want to close the curtains, as brushing a friend's face with a torch in the dark might attract a few strange looks from the neighbours!

THE SET-UP CREATE PORTRAITS IN THE DARK

Prepare for light-painting with a dark room, a willing subject and a fibre-optic brush

01 TRIPOD
Whether light painting a person or any other object you need to use an exposure that lasts at least a few seconds in order to give you time to move the torch through the scene. As such, a tripod is vital to keep the camera still throughout the exposure.

02 SELF TIMER
Any stray light from the fibre-optic brush will show up in your exposure, so be in position with the brush on the face before you press the shutter. If you're shooting this alone then use the camera's self timer or a wireless release to trigger the shutter.

03 FIBRE-OPTIC BRUSH
You can use any kind of torch for light painting, however a fibre-optic brush lets you create a wonderful array of glowing dots and lines all over your portrait for some delightful effects. Try a few out torches and see which you like the most.

04 DARK ROOM
Light painting must be done in a dark room. It should be dark enough so that the ambient light has no bearing on the exposure. To check, after setting your exposure, take a test shot without the torch, the image should be totally black.

05 BLACK BACKDROP
A black backdrop is ideal for this portrait effect, as it allows the light trails to show clearly. It will also help to keep the ambient light from fogging the exposure. We used the black side of a pop-up reflector for our backdrop, but any dark material will do.

06 MANUAL FOCUS
You don't need a special lens for this, any medium length lens will do. We used a zoom lens set to 70mm, which is a good focal length for portraiture. After focusing on the subject, switch to manual focus to prevent it hunting in the dark.

TOP TIPS PAINTING WITH A FIBRE-OPTIC LIGHT BRUSH

Get your camera and torch set up for light-painting portraits and learn different brushing skills

LIGHT AND SHADE

One of the challenges with light painting is in getting the right balance between light and shade. The dark areas will help bright lines and waves to stand out, so they're just as important as the light areas. Just like regular portrait lighting, if you shine the light at the face from straight-on then it will be flat and dull, whereas if you shine at an angle from one side, above or behind the face, then you can create pockets of light and shade that add depth to the subject and enhance the effect.

01 TORCH AND BRUSH

Our brush works in combination with a normal torch. The torch is attached to the end of the brush (we used a makeshift cardboard tube to connect the two). The fibres split the beam into many tiny points of light that dance and move as you flick the brush.

02 COLOUR THE LIGHT

We can add different colours to our fibre-optic brush by using pieces of coloured tape or gel. We tape these to the rear of the brush. Experiment with different colours, and try using two colours at once by taping each over one half of the beam.

03 USE MANUAL EXPOSURE

The right camera settings for this will vary depending on the power of your torch, but a good place to begin is in Manual mode with ISO100, aperture f/8 and a shutter speed of 15 secs. If the shot looks too dark or bright, we simply adjust the aperture to compensate.

04 KEEP STILL

We need our subject to stay as still as possible during the exposure, so it's best to have them sitting down. A little movement is inevitable, but big movements will ruin the shot. If you're painting the brush over the face ask subjects to keep their eyes closed.

05 MAKE GLOWING SPARKLES

You can get different effects with the fibre-optic light brush depending on how you touch it to the subject's face and skin. For example, if you dab it up and down in different places then you can make dots and sparkles over the face.

06 CREATE WAVES OF LIGHT

If you sweep the brush over the face then it'll appear as glowing waves of light. You can also add detail to areas by shining the light over the face from a distance. Try doing this from one side or behind the subject to light the edges of the face.

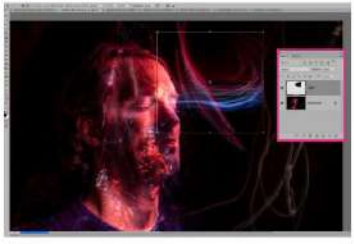
NEXT MONTH
RING LIGHT MASTERCLASS

TOP TIPS EDIT YOUR RAW IMAGES IN PHOTOSHOP

Use simple tools in Photoshop to boost your portraits or combine several frames into one

01 TWEAK COLOURS

You may find that afterwards the images have a heavy colour cast. It's best to shoot in Raw, so you can change the white balance (and other settings) in post. You can also target and adjust the hue of individual colours using the Color Mixer panel in Camera Raw/Lightroom.



02 BLEND SEVERAL FRAMES

Try combining the best parts from several photos into one. This isn't difficult as long as the frames are in alignment. Select an area, copy (Cmd/Ctrl+C) and paste in place (Cmd/Ctrl+Shift+V). If you want just the light trails to show through, set the blend mode to Lighten or Screen.

03 INCREASE CLARITY

If the trails initially look a bit weak then try increasing Clarity in Camera Raw/Lightroom. You can do this in the Basic panel, or grab the Adjustment Brush (K), load it with positive Clarity then paint over parts of the image to selectively boost the glowing light trails.

TOP TIPS PLAY AROUND WITH LIGHT PAINTING TOYS

You can use all sorts of little light sources to add extra layers to your vibrant light painting...

WHILE THE fibre-optic brush used in this project can give stunning results, it's not an essential piece of kit for light painting. You can use any kind of glowing object you like. Chances are, you probably have items around the house that could be used to interesting effect. Here we used a twirling light stick, the kind of thing you can buy from a fairground or at a carnival. By waving the stick around both in front and behind our subject we created an array of glowing lines. Other items that could work equally well include fairy lights, glow sticks and toy light sabres. You could even try using a phone or tablet with a colourful display.

WATCH VIDEO ONLINE
http://bit.ly/pp_186_2

PROJECT 2

THE MISSION

Get creative with freelensing for cool bokeh effects

Time needed
30 minutes

Skill level
Beginner

Kit needed
- Lensbaby Spark or prime lens
- A Christmassy scene

Create a light show with a Lensbaby

Dan Mold shows you how to use a Lensbaby to shoot creative Christmas ornament close-ups with brilliant bokeh effects…

We have a feeling Santa will be delivering his fair share of Lensbaby Spark 2.0 lenses this Christmas. The successor to the massively popular Lensbaby Spark isn't your normal lens, as it gives you the ability to tilt your focal plane for incredible results. We've seen them at around the £150 price point, which could make it the perfect Christmas present for the photography-lover in your life – or yourself of course!

This mini tiltable lens is manual focus only and features a flexible bellows-like design. You squeeze the lens in and out to adjust the focus, while tilting and rotating the optic moves the position of its sweet spot. Its aperture range is f/2.5 to f/22 and the included Lensbaby Sweet 50 (50mm) optic can be swapped out and replaced by any of the brand's 15 Optic Swap glass.

We're using the EF version today to fit our Canon EOS 6D Mark II, but mirrorless shooters will be pleased to know that the Spark 2.0 is the first flexible Lensbaby available for Canon's mirrorless RF mount cameras too. If you're on a tight budget, the original Spark is available for less than £100. Lensbaby optics give you the ability to tilt the lens using its bellows system, which lets you get really creative with focus, depth of field and bokeh, as the focal plane can be pivotted so it's not parallel to your camera's sensor. This is usually reserved for specialist tilt-shift lenses like Canon's TS-E 50mm f/2.8L Macro lens, which costs a whopping £2439! Don't worry if a Lensbaby is out of your budget though, we'll show you how to create a thrifty tilt effect using a freelensing technique with regular lenses you probably already own (Step 6).

The Lensbaby Spark 2.0 rewards creativity, and its ability to produce ethereal images can be used to create stunning close-ups, portraits, abstracts and more. In this case, though, we were keen to take advantage of the vibrant colours and bright lights of our Christmas tree, and prove that you can be creative even if you happen to be stuck at home.

QUICK TIP

Focusing with the Lensbaby Spark 2.0 does take a little getting used to… We'd recommend playing around with the lens for a while to get used to its moving sweet spot, and bellows-like design, before embarking on a specific project. The focus and aperture are set manually, so it's best to shoot in the Manual mode.

STEP BY STEP GET CREATIVE WITH FREELENSING

Discover how to use a Lensbaby for creative Christmas bokeh still-life shots at home

01 SANTA BABY

Choose a suitable Christmas decoration for your subject. We used an ornament of Santa in an aeroplane to complement the Spark 2.0's ability to warp images. The directional blur would then make it look like Santa is zooming through the frame.

02 LET THERE BE LIGHTS

Place the decoration on your Christmas tree, and make sure it's surrounded by fairy lights and baubles. If your tree doesn't fill the whole frame, place some more lights in the background to occupy the negative space for extra bokeh.

03 OPEN THE APERTURE

Attach your Lensbaby Spark 2.0 to your camera making sure it's the right fit for your EF or RF mount DSLR or mirrorless. The aperture is set on the attached 'Sweet 50', so we opened it to f/2.5 to blur the fairy lights as much as possible.

QUICK TIP!

Hold the bellows in the position you want and then rock back and forth until your focal point is sharp before taking your final picture

04 MANUAL MODE

Use Manual mode and set the shutter speed to 1/200 sec to reduce the risk of camera-shake, then boost the ISO to 800 and take a test shot. If it's too bright, lower the ISO a little and if it's too dark increase the ISO a bit, don't be afraid to push the ISO as high as 3200 if needed.

05 SQUEEZE AND SHIFT

Focus the Spark 2.0 by squeezing the bellows inwards and slowly releasing them while keeping the lens straight. Refine your focus by gradually moving the lens closer or further from the subject. Once your point of focus is sharp, tilt the lens to move the sweet spot around the frame.

06 FREELENS THE DIY WAY!

If you don't have a Lensbaby Spark you can have fun creating tilt-shift-style images with freelensing instead. This works by detaching your lens and holding it in front of the camera's mount. You move the lens backwards and forwards and tilt to adjust the focus and focal plane.

THE MISSION

Learn to take some Christmas-themed portraits at home with your family and or friends

Time needed
One hour

Skill level
Intermediate

Kit needed
- 50mm f/1.8 lens
- Flashgun
- Reflector
- Christmas props

Festive family photos

Taylor Brady shows you how to take professional family photos with a festive theme at home – using both natural window light and flash

Christmas-themed portraits are a great way to create lovely memories of your family and friends celebrating this exciting time of year. With some key camera skills and a variety of props and decorations, your shoot can be fun for the whole family. They also make excellent gifts and Christmas cards for friends and relatives, too!

The great thing about shooting portraits with a Christmas twist is that they're really budget-friendly. You don't need a professional studio kitted out with loads of lights: in this project I'm going to show you two lighting methods using a basic Canon flashgun and also, for even tighter budgets, how you can achieve great results with a simple natural window light and reflector setup.

While Christmas props for your shoot can be picked up for a low cost too, you may already have some stashed away in your loft or cupboard. We used some fake Christmas trees, cosy blankets, a garland and Santa postbox as props, but don't forget to dress your little ones up in Christmas outfits to complete the look!

So crank up the Christmas music, dig out your festive decorations and follow some of my tips to take some fun portraits your family will love and spread some Yuletide cheer.

WHAT YOU NEED FOR FESTIVE FAMILY PORTRAITS

Get kitted out with the right camera gear and props to create festive family photos at home

01 CHRISTMAS PROPS

We gave our Christmas portraits a festive theme by using props of small Christmas trees, fairy lights, Santa's postbox and some tinsel. This may be stuff you already have at home, but stocking up on Christmas props doesn't break the bank if you need some extra bits.

02 YOUR LITTLE SUBJECT

Pose your children, or ask a friend or family member if you can borrow their little ones, to pose for a few pictures. Little Arlo was just seven months old and wasn't crawling yet, so was happy to pose for us. We managed to get some big smiles out of him by jingling some of his favourite toys.

03 BRIGHT WINDOW LIGHT

You can get great results with some basic window lighting at home, just set up your makeshift studio near a bright window that gets plenty of sun. If you shoot on an overcast day, like we did, the sun will be much more softer and flattering, as the clouds act as a large softbox in the sky.

04 CANON DSLR OR MIRRORLESS

A Canon EOS DSLR or mirrorless camera will deliver fantastic image quality for portraits that you can print or send to your loved ones this Christmas. Canon cameras with an APS-C sensor, like my 7D Mark II, will produce great results and you'll see an even bigger step in quality with a full-frame Canon like the 6D Mark II or R6 mirrorless.

05 LENS CHOICE

I use a 35mm f/2 lens, which has a film equivalent focal length of 56mm, on my APS-C Canon body. This is great for wider group shots of children posing with parents. The wide aperture also makes it easier to shoot with natural window light indoors too, as it means the ISO value doesn't have to be increased too much.

06 FLASHGUN

A flashgun is a great option for introducing consistent lighting and freezing any movement to eliminate camera-shake. Taylor often tilts the flash head up to bounce it off a ceiling, which results in a much softer spread of light, it also helps to prevent bright hotspots appearing on her subjects face.

STEP 1 GET SET UP

It's worth taking the time to set up your scene and camera so that when the kids arrive you're ready to start. A large indoor space with plenty of window light, like a living room, is perfect. My living room is very neutral with grey walls, so I used red and green props to add a hint of colour. Start in Manual mode and set the shutter speed to 1/100 sec, which should be fast enough to freeze any babies or children. For this setup I also used an aperture of f/8 to ensure that there's decent sharpness across the scene. It's then just a case of checking your pictures regularly and tweaking the ISO value to get a perfectly exposed portrait.

Exposure: 1/100 sec, f/8, ISO400

STEP 2 TRY A REFLECTOR

A reflector is always useful for bouncing some light back into the scene when using window light. For some of the close up photos of Arlo I got closer for a frame-filling headshot and used a used a wider aperture to blur the background. The window light was already soft, as it was an overcast day, but I could further soften the shadows on the left side of his face by bouncing light back in with a reflector, creating an even brighter portrait. My Manfrotto TriGrip Reflector has a silver and gold side, which can be used to give your shots a cooler or warmer quality. It also has a handy grip, so I can hold it easily in my left hand while shooting with my right.

Exposure: 1/100 sec, f/2.5, ISO400

STEP 3 USE SOME FLASH

As my window is positioned to the right of my models, I like to combine the natural light with a little flash to create a more even lighting. I use a Canon 430EX II Speedlite on the hotshoe of my DSLR, but tilt the flash head up, so that it's bounced off the white ceiling. This looks much softer and pleasing than the harsh effect you get from a standard pop-up flash. I set my flash to 1/16th power to begin, take a test shot, then will boost or decrease the power as needed. It's also a good idea to get down low, so that eye-level with the kids – a tilting LCD screen can be handy for this.

Exposure: 1/100 sec, f/8, ISO400

STEP 4 MAKE EYE CONTACT

While you can call the baby's name or say phrases in a baby voice, it's often handy to have another person waving one of the baby's favourite toys. Have them positioned close to you and behind the camera so that when they do get your subject's attention they're looking in your general direction – you can then change your framing until you get perfect eye-contact, with the baby looking directly down the camera lens. For babies and toddlers that are constantly on the move use the AI Servo AF mode and place a single AF point over your subjects nearest eye, this will make it so that the camera continually refocuses on this area and for totally sharp portraits.

Exposure: 1/100 sec, f/2.8, ISO400

THE MISSION

Remove unsightly colour fringing from areas of high contrast in your photographs

Time needed
15 minutes

Skill level
Beginner

Kit needed
Photoshop CC

Quick fixes for colour fringing

Dan Mold reveals a couple of simple editing tricks to rid your images of any chromatic aberration in Adobe CC

Chromatic aberration (also known as colour fringing) occurs when different wavelengths of light are refracted at different angles as they pass through a lens element. This prevents the wavelengths from arriving at the same focal plane as the camera's sensor, and since different wavelengths represent different colours, this results in the lurid fringes around areas of high contrast that we'd all rather avoid.

This effect is amplified at both wider apertures and the longest or widest focal lengths of a zoom lens. Lens manufacturers work hard to avoid chromatic aberration and other distortions by using various mixes of lens elements and specialist aspherical and flourite lens elements, as well as coatings like Canon's SWD (Subwavelength Structure Coating) and nano coatings.

While subtle colour fringing might go unnoticed on Instagram or your website, it will be much more noticeable should you decide to produce a large, high-quality print of your work.

You're most likely to encounter noticeable colour fringing when shooting in high-contrast lighting conditions, but that's not to suggest you should avoid these situations. Budget, or old film lenses, are also usually prone to chromatic aberration, as higher end optics, such as Canon's L-series lenses, have better elements and lens coatings to minimize the effect.

You can remove chromatic aberration using Photoshop CC's Lens Correction filter, but the quickest way to banish fringing is to check the Remove Chromatic Aberration checkbox in either Camera Raw or Lightroom's Lens Correction panels.

Photoshop comes into its own if you want to selectively edit your images, or remove stubborn examples of colour fringing via a non-destructive method, like using layer masks. Editing software has made chromatic aberration easy to remove in post. We'll go through our favourite methods to tackle it in this project and accompanying video.

QUICK TIP

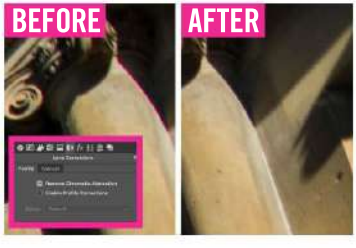
It can be easy to overlook chromatic aberration when you're editing multiple shots, particularly if it isn't too obvious. It's worth getting into the habit of zooming into areas of high contrast and checking for it. We tend to check Remove Chromatic Aberration while working in Adobe CC as a matter of course.

STEP BY STEP FIX CHROMATIC ABERRATION

Get rid of ghastly 'fringing' the easy way in Adobe Photoshop CC

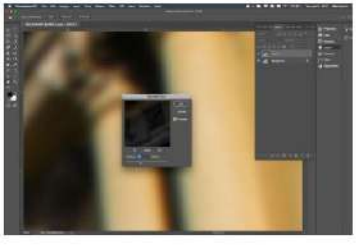
01 VINTAGE VIBES

High-end lenses have become very adept at reducing fringing and some, like the Canon RF 50mm F1.2L USM, manage to prevent it almost completely. But older lenses, such as our Canon FD 50mm f/1.4, tend to be more prone to fringing.



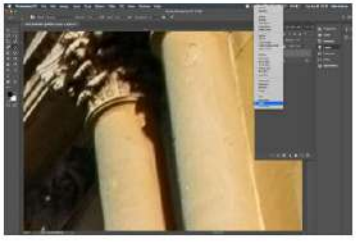
02 LENS CORRECTIONS

Both Adobe Camera Raw and Lightroom feature similar Lens Correction panels. The Remove Chromatic Aberration option automatically removes colour fringing, while the Defringe sliders in the Manual tab enable you to refine the effects further.



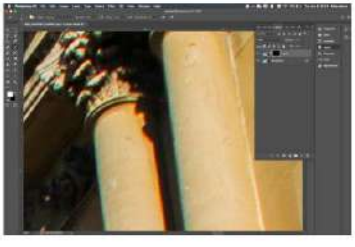
03 BIT OF A BLUR

Open your image in Photoshop and hit Ctrl/Cmd+J to duplicate the 'Background' layer. Go to Filter>Blur>Gaussian Blur to bring up the Gaussian Blur window. We set the Radius to 8.0 pixels, but this will depend on the size of your image.



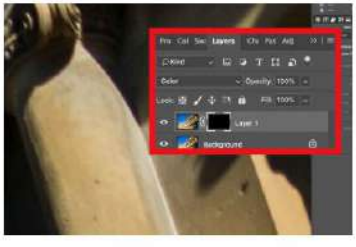
04 THE PERFECT BLEND

Ensure your blurred layer is still selected and click the Blending Modes dropdown menu in the Layers panel. This will be set to Normal by default, but you'll want to select Color. Your image will now look sharp again and the fringing will either be gone or appear considerably less saturated.



05 SQUEEZE AND SHIFT

Unfortunately you may find the saturation of other parts of your image has been reduced. The best way to combat this is to mask the layer and selectively remove the colour fringing. Do this by selecting the Add Layer mask icon at the bottom of the Layers panel and invert it with Cmd/Ctrl+I.



06 BRUSH IT AWAY

Select the Brush tool and choose a soft white brush. You can now paint over areas of chromatic aberration to reveal the Color blending mode layer beneath. If you stray too far off course, simply change the colour of your brush to black and paint to restore your original layer.

THE MISSION

Make a collage in the shape of a Christmas wreath

Time needed
30 minutes

Skill level
Intermediate

Kit needed
Photoshop CC

Make a Christmas wreath collage

James Paterson shows how to create a design for your own Christmas cards and learn essential-yet-easy collaging skills in Photoshop CC

Whether you prefer to send them through the post or online, a personalized Christmas card is a wonderful way to share both season's greetings and cherished photos with friends and family. In this project we'll look at how to create a Christmas wreath collage using a selection of photos. We'll fill the shape of the wreath with our photos, then fine-tune the collage so that everything fits together.

This involves fundamental layer skills, masking techniques and selections. We'll begin with a wreath shape, which can be downloaded from pixabay.com (search for wreath_3005547). You can use this wreath shape as a base to add our own photos, then bring everything together with masks and text.

Key to this effect is Photoshop's Frame tool. This lets us make a frame anywhere in our document, which acts as a window within which we can drag and drop our photos. It gives us the freedom to reposition the image within the frame, so we have ultimate control over each image in our collage. Whether you want to make a Christmas card collage like this or create all manner of other designs, the Frame tool can be useful. After creating our first frame, we copy and reposition it elsewhere to build up the template for our photo collage. Once done, we can complete our Christmas card by adding text and any other design elements you like.

DOWNLOAD PROJECT FILES TO YOUR COMPUTER FROM:
http://downloads.photoplusmag.com/pp186.zip

STEP BY STEP FESTIVE PHOTOSHOP EDITING SKILLS

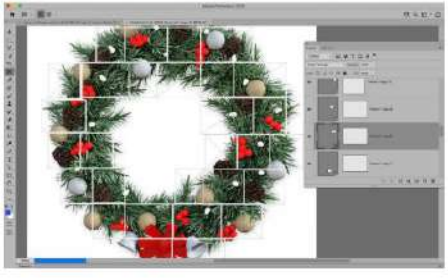
Use the Frame tool to create a template for a collage, then drop in your favourite festive shots

01 DROP IN THE WREATH

Go to File>New and choose an A4 template, then set Background contents: White and hit OK. Download the free wreath from pixabay.com (search 3005547). Drag it into the document and resize it to fit. Click the FX icon and choose Drop Shadow, use the settings shown.

02 MAKE A FRAME

Grab the Frame tool from the Photoshop toolbar, then drag a box over part of the wreath as shown. Go to File >Properties to bring up the options for the frame tool. Click the Stroke colour box and pick white, set the Stroke width to about 8 pixels and hit Enter to apply.



03 BUILD THE TEMPLATE

Get the Move tool, hold Alt and drag the frame to make a copy, reposition it beside the first. Click the edge of the box to change the width. Make it vertical, square or any ratio. Keep Alt-dragging and repositioning to build up the template, but leave some gaps for the wreath.

04 ADD YOUR PHOTOS

Make a folder for the shots you want to use, arrange Adobe Bridge and Photoshop so you can see both, drag shots from Bridge into the frames to populate the collage. Next, highlight the top frame layer, hold Shift and click on the bottom, hit Cmd/Ctrl+G to group them.

05 MASK THE GROUP

Cmd/Ctrl+click the wreath layer to load a selection, highlight the group and click the Add Mask icon. Go back to the wreath layer, use the Object Selection tool to select the ribbon, hit Cmd/Ctrl+J to copy to a new layer, drag the cut out ribbon to the top of the stack.

06 ADD THE TEXT

Use the Type tool to create your own text or bring in another shot. We used a pixabay image (no. 4659102). Select the text with the Object Selection tool, copy and paste it into the collage, then use the Move tool to position and resize it in the centre of the wreath.

QUICK TIP!

If you want to select any object all you have to do is click on it with the updated Object Selection tool – nice and easy!

FINE-TUNE YOUR COLLAGE

The great thing about the Frame tool is that each image can be repositioned within the frame by clicking on the box with the Move tool. Make sure Auto-Select Layers and Show Transform Controls are checked in the tool options at the top, then use the bounding box to change the size or position of the image inside (hold Shift while resizing the image to constrain the proportions). Fine-tune the collage until everything fits neatly together.

THE MISSION

Blend two photos to create a double exposure

Time needed
20 minutes

Skill level
Beginner

Kit needed
Affinity Photo

Double takes

Combine images the modern way for an old-school film effect and learn key layer skills in Affinity Photo with expert **James Paterson**

Double-exposures are among the easiest of effects to try out on your photos. The act of blending two images into one is not only eye-catching, but also allows you to explore conceptual themes in your photography.

Through your choice of photos, you can create conceptual images that spark ideas and pose questions. You could evoke an atmosphere of big-city melancholy like this, or juxtapose themes.

The technique is simple in Affinity Photo, and offers an ideal introduction to several layer tools and tricks. We begin by copying one image on top of another, so that they each sit on their own layer. Once done, we can use a layer blending mode to merge them, so that the lighter parts of each image show through, like an old film camera double exposure.

After this, we can fine-tune the blend by tweaking the positioning and using a layer mask to control which parts are visible. Finally, we can add a black-and-white effect to help everything gel together. The real skill here is in choosing images that work in harmony with one another. Strong, bold shapes, like the silhouetted couple and the building here, tend to work very well – you can download both start images (double_1.jpeg and double_2.jpeg) for free from the link on the left. But it's worth experimenting with different photos in your own image library to see which works best.

Of course, not only do we have the freedom to try out different photos, we can also experiment with the positioning and sizing of them, so that we can line up each picture to create a satisfying whole, or even narrative.

DOWNLOAD PROJECT FILES TO YOUR COMPUTER FROM:
http://downloads.photoplusmag.com/pp186.zip

STEP BY STEP MULTIPLE EXPOSURE EFFECTS

Use layer blend modes to combine images in creative ways in Affinity Photo

01 COPY AND BLEND

Open our images or ones you'd like to use, copy one with Cmd/Ctrl+C, go to the other image and paste with Cmd/Ctrl+V. Go to the Layers panel, click the Blend Mode dropdown and change Normal to Screen. This combines the brightness values of each frame.

02 ADJUST THE POSITIONING

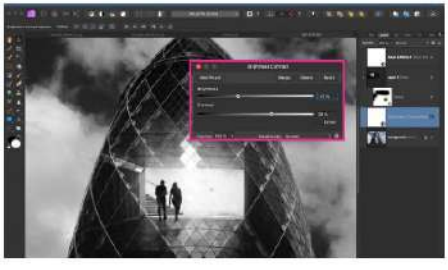
With the top layer highlighted, grab the Move tool from the toolbar on the left. Drag the shot to change the positioning, and if you want to resize the image drag the corner of the bounding box. Tweak the placement until the images fit in a way that you like.

03 ADD A LAYER MASK

The edges of the top layer here look messy, let's hide them. Click the Layer Mask icon at the bottom of the Layers panel to add a mask to the top layer. Get the Brush tool, set the colour to black and lower the brush hardness to 0%, paint to hide the edges of the layer.

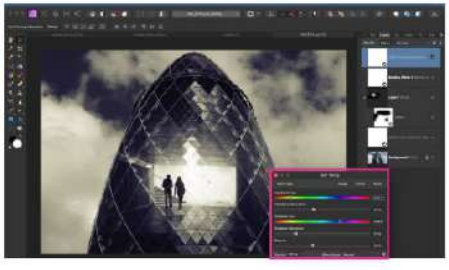
04 CONVERT TO MONO

We can use an Adjustment Layer to convert the image to monochrome. With the top layer highlighted, click the Adjustment icon in the Layers panel and choose Black and White. Fine-tune the black and white sliders to control the brightness of the colour ranges.



05 FINE-TUNE BRIGHTNESS

When making double exposures we double up the brightness of our images, so we often need to darken one or both frames. Highlight the bottom layer then click the Adjustment icon and choose 'Brightness and Contrast'. Lower the brightness until it looks right.



06 ADD A SPLIT-TONE TREATMENT

Click the Adjustment icon again and choose Split Toning. Use the sliders to add a tint to both the highlights and the shadows and adjust the strength with the Saturation sliders. Make any other tonal changes you like to finish off the image.

SCREEN MODE

In the days of film double exposures would be created by exposing one frame, then rewinding the film and exposing another one on top of the first. Light is additive, so bright areas in the first frame could only stay the same or get brighter, never darker. The Screen blend mode in Affinity Photo works in much the same way. As such, the double exposure effect works especially well with images that have bold contrast, as the lighter parts on one frame can be blended with the darker areas on another.

QUICK TIP!

Click the cog in the Layers panel for the Blend Options and experiment with the points to fade out the shadows or highlights

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VLADIMIR RYS

No photographer gets as close to the Formula 1 action as Vladimir Rys. He tells Keith Wilson how he keeps up to speed in a sport where success for both pro drivers and photographers is measured in fractions of a second…

ON THE eve of the Russian Grand Prix, it's raining in Sochi, and Vladimir Rys tells me the forecast is wet for the whole week. The timing of a pit stop to change tyres from 'slicks' to 'wets', may be the crucial difference in the tight Formula 1 race between reigning champion Lewis Hamilton and the current championship leader Max Verstappen. Only a handful of points separate the two front runners, with just seven rounds to follow this weekend's round 15 race of the Formula 1 season. Furthermore, there is tension in the air following the spectacular crash between the two drivers in their previous meeting at Monza, home of the Italian Grand Prix.

Hamilton was quick to denounce Verstappen for a manoeuvre that resulted in Verstappen's Red Bull lifting off the kerb and landing on the British driver's Mercedes, taking both drivers out of the race, with Hamilton narrowly missing

01 **FOLLOWING THE RUBBER TRAILS**
Dutch driver Max Verstappen rounds a bend in his Aston Martin Red Bull Racing RB15 car during the 2019 Spanish Grand Prix.

Lens	Canon EF 400mm f/2.8L II USM
Exposure	1/5000 sec, f/2.8, ISO500

serious injury. Vladimir missed that race after contracting COVID-19, but he's back on track, ready to photograph the practice and qualifying sessions before the big race itself, where all eyes will be on the next clash between the two world-famous drivers…

Will you be looking for pictures of Hamilton and Verstappen together before, during, and after the race?
Yeah, I guess the trackside photographers will be, but because of COVID the photographers are split, so you are either embedded with the team and have access only to the paddock and garage, or you are trackside. You can't do both at the same time as we used to, so I'm embedded with the team for this one and I'll be in the garage.

> "Sometimes I work in like a tunnel view, I'm so fully focused on what is happening in front of me"

Catching COVID gave you a good excuse for missing the crash picture then?
That's true, yeah. A friend of mine got the best picture. He was right in front of it when it happened. Crazy. It's not easy. You can be there, but to capture that is a different story. I know so many photographers who miss so many crashes.

The whole nature of the sport is high speed, so when you are trackside what do you focus on first and foremost?
I think it's a question of experience. I remember missing so many pictures because I didn't know what was going on throughout the race. Even if you're trackside, you don't have any giant screen in front of you to see who's overtaking who, or how many laps to go, or who's pitted, so I'm trying to be fully focused so that I see every lap how the cars come, and I remember when is Lewis's car coming, or when is Max's car coming. If I see a different position I understand then that somebody pitted, or somebody overtook somebody else. And then you need to know if there is a yellow flag, if there is a safety car, what's happening, or a red flag, and you have to know what is going to happen next. When do they do a restart? What can happen at the restart? Where will it happen?

There's a lot to understand about the workings and rules…
You have to think about all this stuff, and I think the experience just helps you to get closer to capturing what you want, or to capture an important moment. It's so fast, you have to be so focused. Sometimes I work in like a tunnel view, I'm so fully focused on what is happening in front of me, and then you use your instinct and try to see what can happen before it happens. I think instinct is very important with this job.

For Sochi, what will you be packing? How many Canon EOS camera bodies and lenses?

02 CHAMPAGNE MOMENT
Red Bull driver Daniel Ricciardo of Australia celebrates on the podium after winning the 2014 Canadian Grand Prix.

Lens	Canon EF 400mm f/2.8L II USM
Exposure	1/8000 sec, f/2.8, ISO250

03 MAKING DONUTS
Max Verstappen's car in the 2019 Abu Dhabi Grand Prix, where he finished second behind the Mercedes AMG Petronas of Lewis Hamilton.

Lens	Canon EF 24mm f/1.4L II USM
Exposure	1/2500 sec, f/1.4, ISO800

04 VICTORY JUMP
Great Britain's Lewis Hamilton leaps from his Mercedes AMG Petronas car after winning the 2017 Singapore Grand Prix.

Lens	Canon EF 24mm f/1.4L II USM
Exposure	1/6400 sec, f/1.4, ISO1600

"With the R3, the speed is amazing – the burst and the shutter speed and the autofocus speed, I was absolutely blown away"

Normally, I would have three camera bodies with me, which right now are two EOS-1D X Mark III bodies and one R5. I still haven't got the R3 because the promotional work was all pre-production cameras, so we're still waiting for the normal production cameras. There's a delay in supplies because there's been so many orders already. I always have a bunch of lenses with me: the EF 400mm f/2.8L as a trackside lens; I always have the EF 24mm and 35mm wide-angle and two fast EF 50mm lenses with me, plus the EF 85mm and 135mm L-series.

All prime lenses and no zooms. Why is that?
I haven't used a zoom for about ten years now. Rather than zoom in and zoom out quickly, I prefer to move myself to the subject, or just move back a bit and frame the picture how I want with a prime lens. If you are a news photographer, you have to zoom in and zoom out quickly to catch the moment, but I can justify missing one or two pictures when I work for a client, focusing just for what I actually want, what I need.

How long have you been photographing with Canon?
I've been shooting with a Canon since 2002. I started in 1996 and from then until 2001 I was shooting with a few different brands.

So, having worked with so many Canons, is there one model that stands out for you as a game changer?
For me, the EOS-1D X, the Mark I. Even now, I know a few photographers who still work with the Mark I, because it was such a great camera, such a big step up in the quality and colour transmission. Everything was amazing. Then I moved to the 1D X Mk II, then 1D X Mk III, it's always a step higher, obviously, but the Mark I was such a massive step forward and I loved the camera. But with all the new cameras, it's always familiar because you know where the buttons are and you can use it instinctively straight away.

You've been using the EOS R3, a pre-production sample, what did you most like about it?
You know, before I got the R3 camera in my hands, speaking to my colleagues, most of them were worried about the mirrorless technology and the digital viewfinder. "How could you work with a digital viewfinder?" It's something very different, it's a new era coming in now, so I was a little bit worried. I'd had the R5 for a couple of months, which I was very happy about. I used it a lot in the garage and the quality is fantastic, but I didn't know what to expect from the R3.

And your first impressions?
We were all excited, we knew it was coming, but when I first got an R3 in my hands and used it for five minutes, I was blown away! It was the same feeling as with the 1D Mk I, this excitement when a new technology comes in and the quality you can get. With the R3, the speed is amazing – the burst and the shutter speed and the autofocus speed, I was blown away. I pressed the shutter release and I took so many pictures I was like, "How many pictures did I just take now?" To get back to your previous question, I think the 1D X and the R3 are the best cameras.

05 IF THE HAT FITS
Wearing the race winner's cap, Daniel Ricciardo of Aston Martin Red Bull Racing smiles to the crowd after his success in the 2018 Chinese Grand Prix in Shanghai.

Lens	Canon EF 400mm f/2.8L II USM
Exposure	1/4000 sec, f/2.8, ISO800

06 TOTALLY FOCUSED
The Red Bull logo on the bodywork of an RB11 race car reflected in the eye of one of the mechanics in the garage.

Lens	Canon EF 100mm f/2.8L Macro IS USM
Exposure	1/40 sec, f/7.1, ISO2500

07 DRIVER ON THE STORM
Water sprays from the wet track and tyres of Daniel Ricciardo during qualifying for the 2016 Hungarian Grand Prix.

Lens	Canon EF 24-70mm f/2.8L II USM
Exposure	1/1250 sec, f/4.5, ISO200

"Obviously, there are people who don't want to be friends because of the competition"

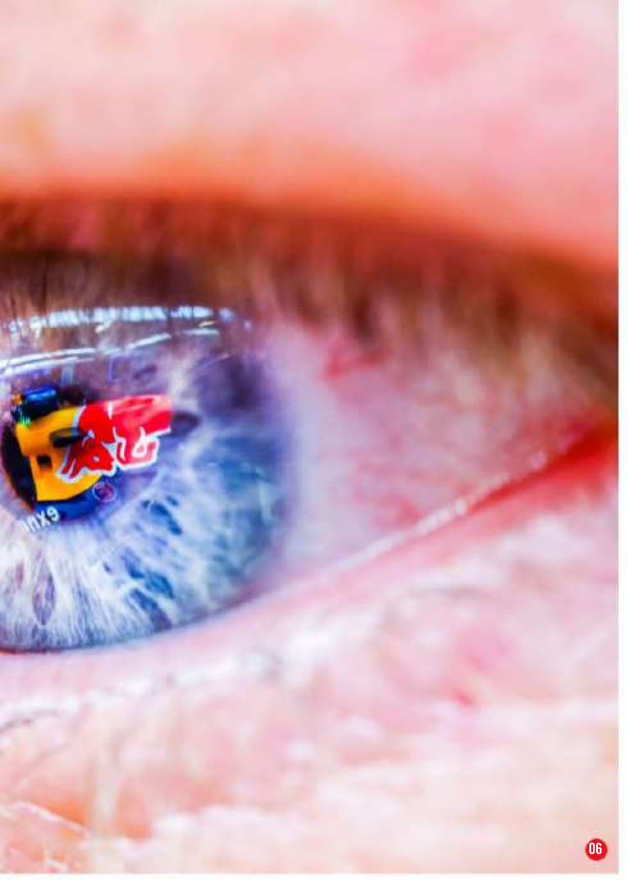
I feel the same excitement with the R3 as I did with the 1D X, but with the difference that it's a completely different technology that's going to stick around for at least two decades, I guess.

Obviously, F1 is a heavily covered sport, so what is the camaraderie like among photographers? How intense is the competition?
I've never worked in such a competitive environment. All-year long you're constantly competing with each other. One of my best friends is a Mercedes photographer, we are good friends, we go out for dinner, but I want to beat him on track with pictures! I think he does the same. This keeps you sharp as well, so there's a lot of competition.

I heard an old interview with Ayrton Senna from Monaco in 1992 or 1993, I think, and the journalist asks him about this: "Do you think people in F1 are special, that's why they are in F1? Or do they feel special because they are in F1?" And Ayrton Senna replied, "I think F1 is very competitive and everyone's ego is being tested constantly, because there's a lot of pressure, a lot of competition, and everybody reacts in a different way to it." How I react is I try to be friends with everybody. Obviously, there are people who don't want to be friends with you, because of the competition, but I try to separate this, the camaraderie and work.

So, who are the photographers or who's work do you admire that gives you inspiration?
You know what, I never had one mentor or a photographer I looked up to, but I was always a great fan of the old classic photographers: Henri Cartier-Bresson and a lot of Czech photographers back in the 1930s and 40s, like Josef Sudek. It wasn't sports photographers that I would look up to. I know one photographer who opened my eyes in terms of sports photography, an old Czech photographer called Jirí Pekárek, and he's still around. His work wouldn't be classic sports pictures, it would be a picture behind the picture, a story, which excited me and made me think I really want to do that.

Back in his day he was working for a monthly magazine, so you'd see his pictures only once in a month, but I'd wait for that. Yes, the old photographers, the black and white photographers, some of the fashion photographers too, Helmut Newton, Mario Testino, all these guys. It's a mixture of photography, but the favourite one for me was definitely Josef Sudek.



06

CINEMATIC LOOK

This image of Max Verstappen provides insight into why Rys prefers primes lenses…

One of Vladimir's reasons for using Canon prime lenses is to do with his creative style. "I like to shoot quite wide open, to create a cinematic look with a shallow depth of field," he says. This portrait of Max Verstappen, of Aston Martin Red Bull Racing, is a prime example of this cinematic approach. Taken prior to the qualifying lap at the Bahrain Grand Prix in March 2019, Vlad used an EF 135mm f/2L USM on his EOS-1D X Mark II to frame the driver while he sat and waited inside his RB15. By focusing on the driver's eyes and shooting at maximum aperture, any front or back depth of field is effectively removed, transforming the visor of Verstappen's helmet to vertical bands of diffused colour. "I think it's a different kind of philosophy to how you approach shooting," he says. "If I know that I want to shoot a certain picture trackside and I need, say, an 85mm or 135mm lens, then I would go and find the position for that lens. I wouldn't just stand there and zoom in and zoom out."

07

Have you always been a motorsport lover?
No. I didn't have any interest in motorsport until 2004-05. My first season was 2005. I was more into football and basketball, ever since I was small. Basketball because of Michael Jordan and football because of Diego Maradona. Obviously, I knew who Ayrton Senna was, and Michael Schumacher, but I think that's what saved me because I wasn't really star-struck when I saw Michael Schumacher walking next to me. I was only focused on how to capture him photographically! There are a lot of people who want to come into Formula 1 because they are fans, I was the opposite.

Did it take you long to get the hang of it?
No, straightaway. I remember in Australia, my first race in 2005, I got the buzz instantly. We had V8 engines back then and the sound and the smell of the rubber, of the petrol, it was just amazing! From a photographic point of view, completely new work opened up in front of my eyes. You can be so creative in this sport and go and find a shot on your own, which is what I love about Formula 1.

What were you photographing before Formula 1?
I was shooting everything, but throughout my career somebody always tried to push me into a more creative way because they liked my style. Also, in Formula 1, my boss came to me and told me to keep doing it from now on, because he said to me, "I like your style. I think it would suit our F1 coverage." Before then I was shooting a variety of sports, a bit of news, I even shot fashion, reportage, a bit of everything, studio as well, which I wasn't a big fan of, because I always like available light more.

Were you always keen to be a photographer when you were growing up?
I was a slow burner, because when I was about 12 or 13, I remember my teacher asking my mum what I wanted to do and my only interest was football and BMX riding, so my parents didn't really know what to do with me. I studied economics and then I knew after one or two years, I knew I was never going to work as an accountant, and I said to my parents I'd like to do photography. My grandfather

08 CRASHING OUT
A crash between Formula 1 legend Michael Schumacher and Red Bull driver Jean-Eric Vergne at the 2012 Singapore Grand Prix.

Lens	Canon EF 400mm f/2.8L II USM
Exposure	1/1000 sec, f/2.8, ISO1000

09 WINNING STREAK
A slow shutter speed pan created this striking panorama of Aston Martin Red Bull Racing's Daniel Ricciardo during practice for the 2018 Chinese Grand Prix.

Lens	Canon FD 50mm f/1.4 with ND filter
Exposure	1/15 sec, f/4, ISO200

10 SINGAPORE SPARKLER
Sparks fly from the rear of Max Verstappen's Aston Martin Red Bull Racing RB15.

Lens	Canon EF 135mm f/2L USM
Exposure	1/2000 sec, f/2, ISO1600

"Try to create the picture in the camera, and not on your laptop"

from my dad's side used to be a photographer, but I never met him because he died when I was one year old, but I was playing with his old cameras and I was always going to the library and borrowing books about photography. First, I wanted to be a cameraman, but I decided photography was more exciting than film-making, to capture the whole story in one picture. So I started to take pictures and by the age of 16 or 17, I was so keen that I was sleeping with my camera in the bed.

Can you remember what your first job in photography was?
I got my first job when I was 18, I wasn't keen to start work, because I wanted to finish photography school, but our training included going to a daily sports newspaper and they would send us every second week to shoot something the staff photographers couldn't do or didn't want to do, like a handball match, really dull stuff. Two or three months later the boss said, "I've got a job for you", and I asked what it was. He said, "I don't think you understand, I've got a real job for you!" "What? You mean a full-time job?" And he was very rude and started swearing at me, then he said, "Buy two films. On Sunday, you're going to this football tournament, and if you give me one nice picture I'm going to give you the job." Then he hung up without saying goodbye! For the first three years, I was working only in the darkroom, shooting only black and white, it was the old film process still, and he would give me one film for a football match.

Just one film! For a whole football match?
Yeah, and if it was a derby I would get two films! And if it was a request from a magazine I would get a colour film as well, so at best I'd have three films for a whole football match.

Where were you living at this stage in your career?
That was in Prague. I would go to an ice hockey game, and after 20 minutes I would jump on a tram and rush back to the office and dev up the film. It was proper old school, but I think I was very fortunate, because I got it just on the brink of when digital photography was coming in, and I learnt the old processes which opened my mind I think.

How did you get from Prague to working from Red Bull?
I was born and raised in Prague and then

10

I lived in Germany for ten years; I got a job opportunity in Hamburg, so I moved to Hamburg, then Cologne, a bit of Munich, then after ten years I decided to move to Greece – half my family is Greek – then Red Bull called me and asked if I could work directly for them. I had been working for Red Bull Racing for two years through an agency, I went freelance, moved to Greece. Then they called me about a month later and asked me to shoot the Brazil and Abu Dhabi Grand Prix for them in 2010, which was great timing, because this was the first constructors' title in Brazil.

What's the best piece of advice you'd give to someone wanting to become a sports photographer?

I don't know, because every photographer is thinking differently, so it's difficult to teach. But I would say, just to help them, buy a film camera. Shoot on film and try to think about the picture before you actually press the shutter release. Try to create the picture in the camera, and not on your laptop.

So, will Max hold off Lewis to the end of the season?

Oh, Max is going to win! I can see it in his body language. Max is so calm and focused. He has matured so much in the last few years. He will be a world champion sooner or later. Is it going to be this year, or next year? I don't know, but I think they are going to give us a good show until the end.

PROFILE

VLADIMIR RYS

Canon pro sports photographer

Born and raised in Prague, Vladimir Rys started taking pictures at 15, and at 18 had joined the photo staff of *Denik Sport*, the largest Czech sports daily. Two years later, he became a staff photographer with the football magazine *Hattrick*, and in 2002 he moved to Germany and joined Getty Images where he remained until 2010. Since 2005, his main field has been Formula 1, where he is considered one of the sport's most influential and awarded photographers. Vladimir's awards include Photographer of the Year 2000 in the Czech Republic, Photographer of the Year 2010 in Germany, and F1 Photographer of the Year 2014, from the Italian Motorsport Federation, Confartigianato Motori. Vladimir is also a Canon Ambassador and F-stop Gear Ambassador, and when not on the road following Aston Martin Red Bull Racing, he's based in Athens and Dusseldorf.
www.vladimirrys.com

PHOTOSTORIES

*Photo essays from **PhotoPlus** readers and professional photographers alike*

JOIN IN THE FUN!

One of the great things about photography is being able to share your view of the world. This month we have a young reader capturing fantastic wildlife, while another braves a very busy King's Cross Station...

We want your photos and stories! For your chance to show off your images in *PhotoPlus*, email three to five high-resolution JPEGs, along with a brief synopsis – explain why you took the shots, the location, whether they're part of an ongoing project or a one-off shoot, and anything else unusual or interesting. Also include Canon EOS camera, lens and exposure details.

Email images and info to
photoplus@futurenet.com

Catch us online at
www.facebook.com/photoplusmag
www.instagram.com/PhotoPlusCanonMag
www.twitter.com/photoplusmag

PROJECT INFO

NAME: Emily Shardlow

LOCATION: Hawes, North Yorkshire and Banham Zoo, Norfolk

MISSION: Photograph a variety of brilliant animal portraits and encourage others to pursue photography as a hobby

KIT: Canon EOS 4000D and Canon EF 75-300mm f/4-5.6

Animal magic

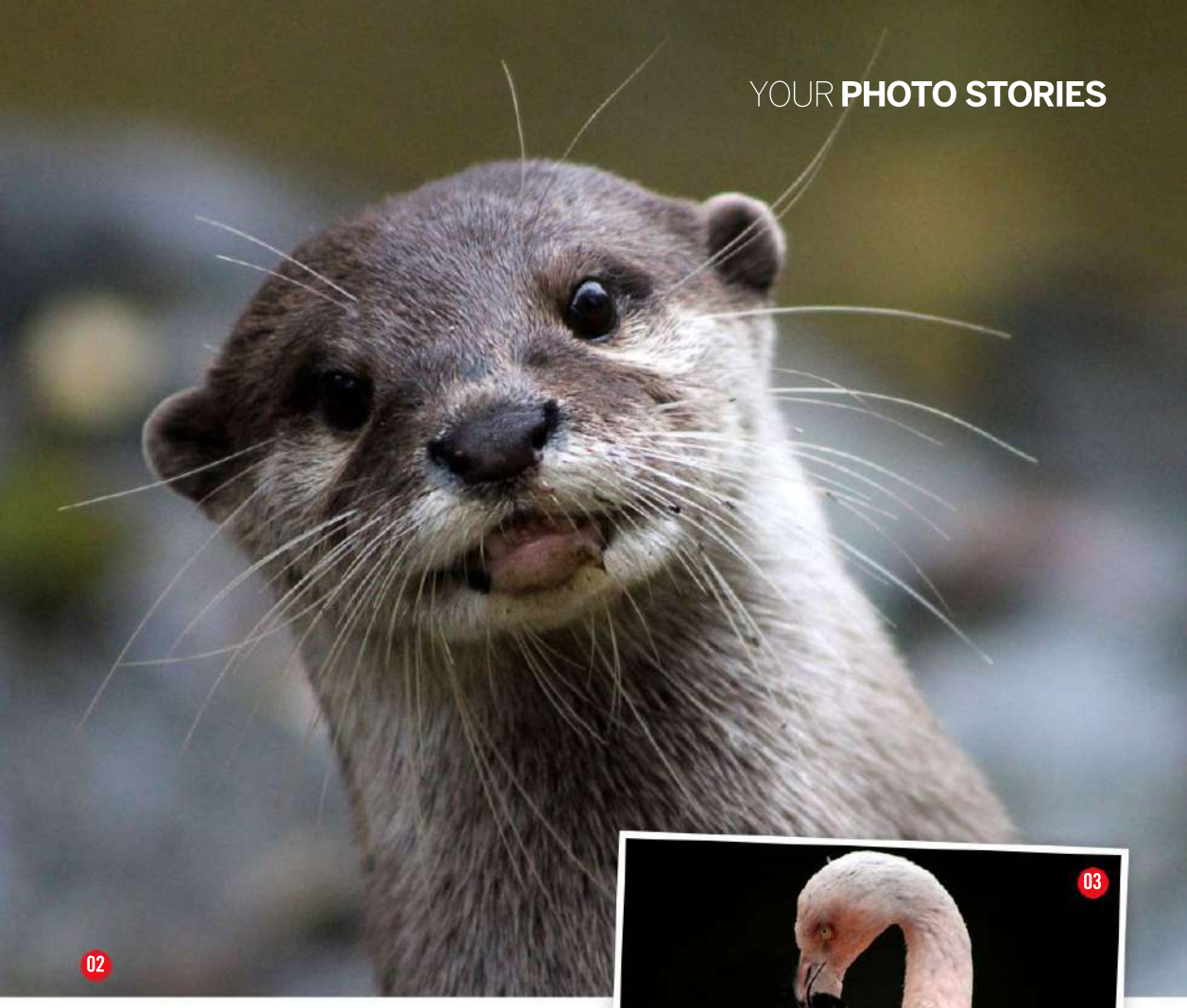
At just 13 years old, Emily has already taken some awesome animal portraits and is well on the way to having a great portfolio

I first got into photography at a young age through my love of animals. I started with a basic camera, but I now have a Canon EOS 4000D DSLR and telephoto lens, which makes it easier for me to take animal portraits.

When I was at primary school I joined the camera club there and further developed my love for photography.

My favourite thing to photograph has to be animals. They give me a chance to show some of the beauty that's still left in the world. The animals are all so different and unique, which means I never get bored of them.

My main goal with photography is to show that younger people can do things if they try. I like to think that, even though I'm 13 years old, my photos show that young people are still capable of



amazing things when given the opportunity, just like anybody else out there.

In my opinion the hardest part about taking these pictures is waiting for the right moment, as you can't just take a photo at any time – for me it has to be the perfect moment when the lighting, animal's pose, and camera settings, all come together to create something truly magical. My advice to anybody that's interested in photography is have patience – it's something that I struggled with at first. I waited for hours to get my shot of a red squirrel, but it was totally worth it to get a portrait I was happy with. If you never give up and you can, and will, achieve amazing things.

01 RED SQUIRREL
Taken at a reserve near Hawes, North Yorkshire

Lens	Canon EF 75-300mm f/4-5.6	Exposure	1/200 sec, f/5.6, ISO400

02 OTTER
This cheeky otter was photographed at Banham Zoo, Norfolk

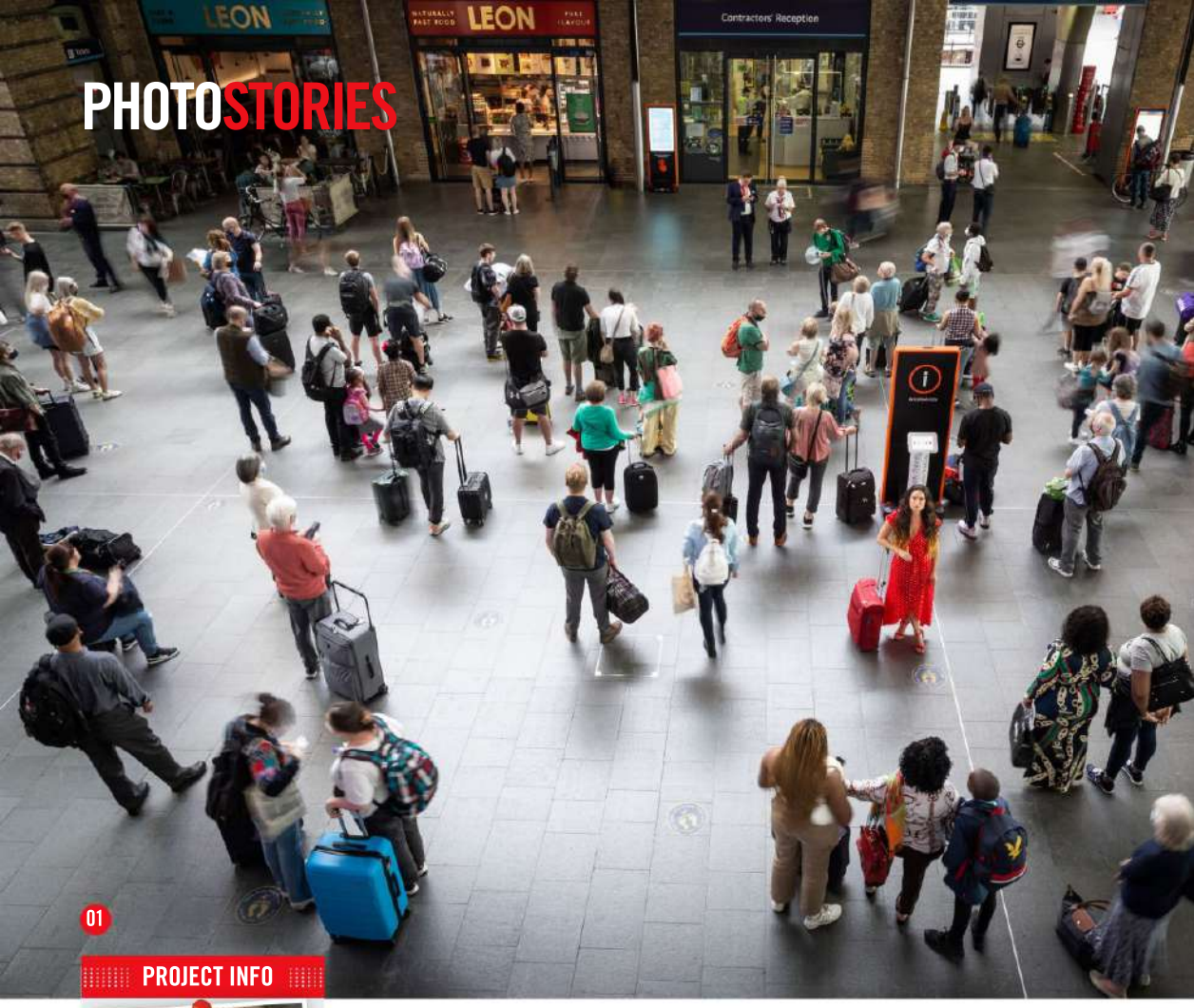
Lens	Canon EF 75-300mm f/4-5.6	Exposure	1/800 sec, f/5.6, ISO3200

03 FLAMINGO
This flamingo makes for a striking subject at Banham Zoo, Norfolk

Lens	Canon EF 75-300mm f/4-5.6	Exposure	1/1600 sec, f/5.6, ISO1250

PhotoPlus FEEDBACK

Emily has already shown great promise and is a reminder that you don't need the most expensive kit to take exceptional shots – a great eye for a photo and entry-level gear like her EOS 4000D has been ample. We love the variety of animals and expressions that have been photographed, and it's great to see her playing with lighting and composition. Waiting for the right moment is undoubtedly the hardest part when it comes to wildlife photography, this is a lesson that Emily has already learned, so we're sure she has a bright future ahead in wildlife photography and we look forward to seeing more from her.



01

PROJECT INFO

NAME: Peter Baker

LOCATION: King's Cross Station, London

MISSION: Capture a series of portraits in London with the theme of travel

KIT: Canon EOS 5D Mark IV, Sigma 85mm f/1.4 DG HSM I Art, Canon EF 17-40mm f/4L USM, Canon EF 50mm f/1.4 USM

Instagram: @images3904

The girl on the train

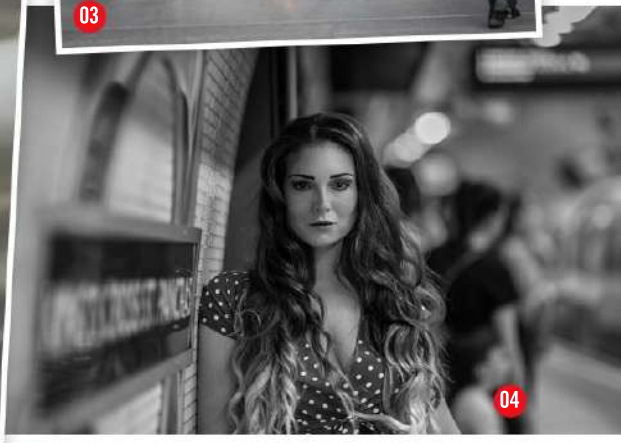
Peter arranged a photo shoot in London, and braved a busy King's Cross Station, to capture a series of travel-themed portraits

I've been taking photos of family and holidays for the best part of 40 years, but have only been taking it seriously for the past four. I attended a 'DSLR for beginners' workshop, joined my local camera club and have been bitten by the photography bug ever since! I love to enter photography contests and the feedback I receive is great for helping me to improve.

A competition came up with the theme of travel, so I arranged to do a shoot with model Debbie Leema (@debbie_leema), as I admired her work and knew she was London based. I mentioned the travel theme and she had some great thoughts, so the collaboration worked well. We agreed that we should have the shoot at London's King's Cross station.

This year has restricted most people's travel and I was scratching my head as to how I could replace travel to exotic places. For millions of tourists London is exotic, but for me it is only 40 minutes away.

I visited the station before the photo shoot to scope it out and look for eye-catching elements and backgrounds, find out where the best lighting was coming from and positions that might offer a good perspective. I liked the idea of having my model stationary in a bright red



dress, surrounded by the hustle and bustle of other travellers at the station.

The surprise I got was having to argue my case with security guards repeatedly. I'd been told that King's Cross welcomed photographers for the publicity on social media. I wouldn't describe them as anti-photography, but they were keen for me to stick to hand-held pictures and keep moving, rather than standing and waiting for the perfect photographic moment.

"The surprise I got was having to argue my case with security guards repeatedly"

My favourite shot, *Rush*, was taken when my camera was set up and I was talking to the security guards trying to find a compromise. Thankfully we were all able to keep discussions constructive and find a common ground.

It all comes down to the individual you are stopped by on the day and, as it's private property, they have every right to move you on. That being said, if you smile, are polite and share what you do and what you're trying to achieve they might be inclined to be a bit more kind and patient with you.

01 RUSH
Peter had Debbie hold a stationary pose so he could blur the commuters rushing past her with a long exposure

Lens	Canon EF 17–40mm f/4L USM	Exposure	0.6 sec, f/11, ISO100

02 WAITING
Peter asked Debbie to pose on the railings above to get a low angle and used a wide aperture of f/2 to separate her from the roof

Lens	Sigma 85mm f/1.4 DG HSM	Art	Exposure	1/240 sec, f/2, ISO400

03 THE WOMAN IN RED
Peter got Debbie to walk towards him wheeling her suitcase – her vibrant red dress easily pops out against the commuters

Lens	Sigma 85mm f/1.4 DG HSM	Art	Exposure	1/250, f/4, ISO200

04 UNDERGROUND
Peter used a wide aperture of f/1.4 for a super shallow depth of field and beautiful bokeh in the underground station

Lens	Sigma 85mm f/1.4 DG HSM	Art	Exposure	1/60 sec, f/1.4, ISO400

PhotoPlus FEEDBACK

Peter's got a wonderful series of shots here, all tied together with his theme. In future we'd suggest he try using a smaller camera and a Gorillapod, which could be lashed around a railing and might be a more subtle option. While his underground portrait is atmospheric, we did note a bit of camera-shake, due to the low-light levels. When shooting in dark conditions it's worth pushing up the ISO to around ISO1600 – it's better to have a slightly grainy image than a shaky one. Minor issues aside, Peter's got an ace portrait portfolio for the competition.

MY KIT

Professional photographers reveal their top six tools of the trade they couldn't shoot without

Jayne Bond

Based in sunny Dorset, Jayne loves nothing more than spending time at her local fox site, or bird hide, photographing wildlife with her Canon EOS camera

I've always thought of myself as artistic, which is lucky as I taught art at GCSE level in a secondary school for more than 30 years! This made it difficult to do any sort of travelling, but in 2015 I retired and was able to fulfil a lifelong dream to visit Borneo and see the orangutans in the wild.

I had a Canon EOS 5D Mark III at the time and I was frustrated with not knowing how to get the best pictures out of it. This inspired me to learn and advance my skills. To do this I continually practiced on masses of gulls and geese in my local park. I also joined a Facebook photography group, which was a great place to get some feedback and advice.

We have some amazing wildlife in the UK and there's nothing I enjoy more than sitting at one of my local fox sites for hours on end, spending time with these incredible creatures. I love to capture beautiful portraits, although the trend nowadays is to aim for more storytelling. I like to combine the two, but ultimately, I want viewers to see the beauty in our local wildlife and admire these creatures as much as I do. It's relatively easy to find bird hides close to you using a search engine, so this can be a great place to practice when you're starting out.

I keep my editing minimal, as I like to ensure that the image as natural as possible, although I do remove distractions if they take the eye away from the subject. As for the orangutans, I would love to return… one day!

WHAT DO I DO?

Jayne Bond

Instagram: @studiomlino

JAYNE IS a natural world and wildlife photographer based in Poole, Dorset. She first got into photography back in 2015 after buying a Canon EOS 5D Mark III, although she's now made the jump to a mirrorless kit with the Canon EOS R5 and EOS Ra bodies. In 2019, Jayne was shortlisted for the British Photography Awards and last year was the overall runner-up in the Natural World category for Natural History Museum's Photographer of the Year – well done Jayne!

IN JAYNE'S BAG

01

Canon EOS R5

WEB: www.canon.co.uk

I'VE RECENTLY changed to the EOS R mirrorless system and I love it. My previous camera, Canon's EOS-1D X Mark II was great, but the R5 has been a game-changer for me: the silent shutter and eye recognition is incredibly useful. The flip screen means I can get low without needing to be a contortionist. As it's got a 45Mp sensor, it also gives me the extra pixels for more space to crop: a godsend when photographing wildlife from a distance!

02

Canon EF 500mm f/4L IS II USM

WEB: www.canon.co.uk

THIS LENS is the best investment I've ever made. It's a beast and I often pair it with a monopod or skimmer plate for low-level shots. It's fast and produces the most sublime bokeh, which makes the subject really pop out from the background. I now attach it to my EOS R5 with the EF-EOS R Mount adapter and I've found no obvious loss of quality.

03

Canon RF 100-500mm F4.5-7.1L IS USM

WEB: www.canon.co.uk

I CALL this my 'carry-round' lens. It's a superb, well-balanced, versatile optic with great sharpness and fast autofocus. Although the widest aperture is f/7.1 at 500mm, the 5-stop IS, in addition to the IBIS of the EOS R5, means I can take handheld shots, even at slow shutter speeds. I love using the lens for panning shots and birds in flight.

04

Canon 5D Mark III

WEB: www.canon.co.uk

THIS WAS the first camera body I bought and, while other cameras have come and gone, I've always kept this as my backup. Nowadays it has my EF 16-35mm lens permanently attached to it. I confess the pair have been a little neglected, but a recent family holiday to Scotland has reinvigorated my desire to shoot more landscapes with it.

05

Canon Extender EF 1.4x III

WEB: www.canon.co.uk

THERE ARE times when I need as much focal length as possible so as not to disturb the wildlife. The RF 1.4x Extender paired with my RF 100-500mm F4.5-7.1L IS USM lens gives a focal length of 700mm when fully zoomed in – it makes a huge difference. It's a great combination to use at the local lakes or for birds in flight.

06

Canon RF 100mm F2.8L Macro IS USM

WEB: www.canon.co.uk

THE NEWEST addition to my kit bag and one I'm very excited about is Canon's new RF 100mm F2.8L Macro IS USM lens. Using it on my EOS R5 I can get low-ground shots with the most sublime depth of field. The minimum focusing distance of 26cm is fabulous for floral work, but I've also used it for portraits and landscapes. The detail you find is so clear and razor sharp!

NEW SERIES

CANON SCHOOL

In part eight of our series: We explain everything you need to know about your Canon EOS lenses

PhotoPlus EXPERT

MARCUS HAWKINS

PHOTO EXPERT

Marcus has been passionate about photography for more than 25 years. A former editor of our sister publication *Digital Camera*, he has written about photography and cameras for a wide range of clients, including Canon and Jessops, and uses a Canon EOS 5D Mk IV.

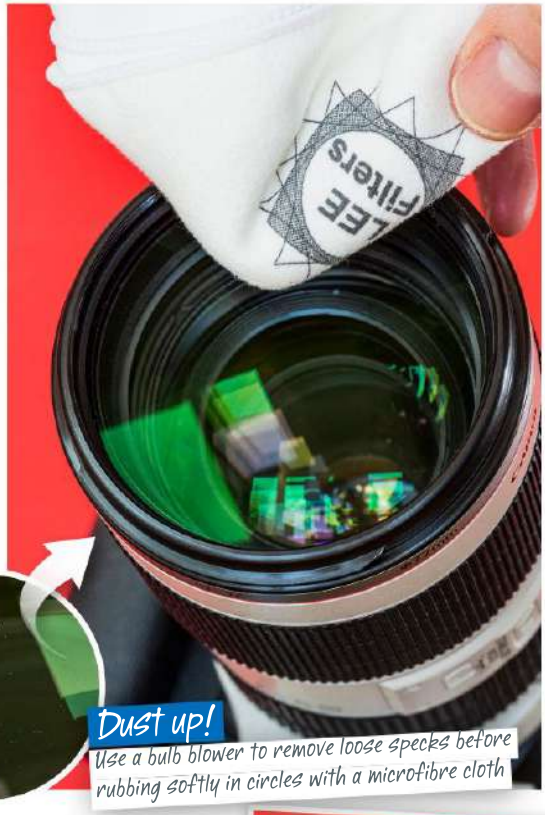
Get the best from your lenses

Learn the tricks and techniques to get the most from your primes and zooms

Whether you own a standard Canon kit zoom or a fleet of L-series primes, getting the best from a lens comes down to the two Ts: technical and technique. The technical covers things like making sure the front element is clean, using a lens hood to shield the glass from stray light and applying digital lens corrections. Technique is all about using the optimum aperture and focal length (with a zoom, at least), as well as ensuring that the camera and lens are supported enough to get a sharp result.

The technical side of things doesn't take long to master, with the most crucial aspect being to keep the lens clean. This doesn't mean you have to strip it down after every shoot, but keeping a bulb blower and microfibre cloth to hand to clean the front element when you're out and is a good idea.

A small amount of dust on the front of the lens (or even inside of it) isn't going to be a significant problem for the majority of shots. It isn't going to register as an obvious speck in your images in the same way that dust on the sensor can. It's when you're shooing into the light, where the dust particles are backlit, that you might notice an overall loss of contrast.



Dust up! *Use a bulb blower to remove loose specks before rubbing softly in circles with a microfibre cloth*

Always fit a lens hood, regardless of the weather

LENS HOODS perform two key duties. Not only do they shield the front element from stray light that can cause contrast-robbing flare and glare, they keep rain and snow off the glass too (which ultimately means less cleaning). More than that, they can help prevent the front of the lens being damaged, should you accidentally crack it into something. You might be able to make out the state of my lens hood. It's more battered than Boba Fett's helmet.

Not all lenses come with hoods, and the ones available for telephoto lenses are generally much more effective than those for ultra-wide lenses. The design of the latter is always short in order to prevent it appearing at the edges of the picture, and you may need to block the sun with your hand or hat just out of shot.

KNOW YOUR LIMITS

Run your own lens tests

Check performance at different apertures, focus distances and focal lengths

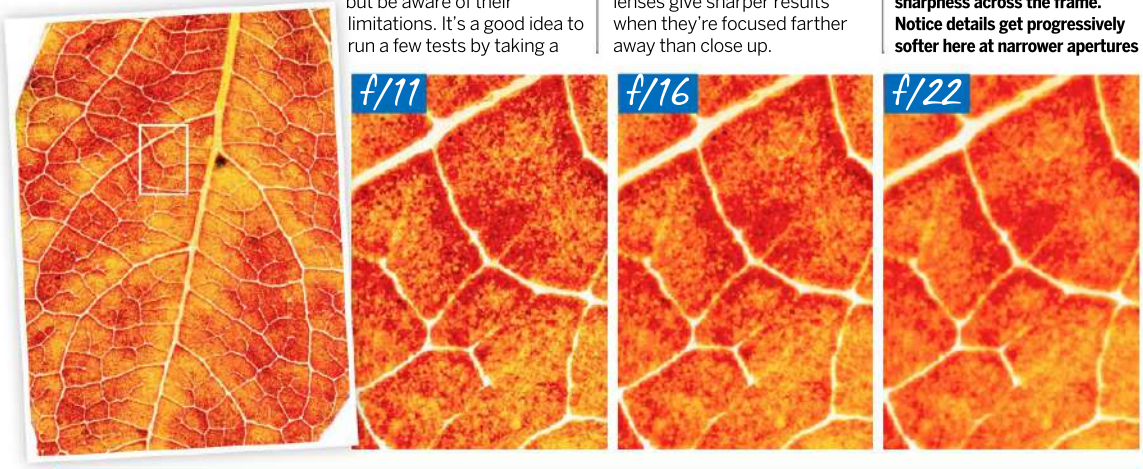
Your lens will perform better at some apertures than others. It's usually a good idea to avoid the extremes of the aperture range. At one end of the scale, the smallest apertures (represented by f-numbers like f/22), will make lots of the scene or subject appear in focus, but it will also show the effects of diffraction more obviously. This leaves details looking fuzzy and indistinct. Using an f-number that's one or two stops lower will sharpen things up though.

At the other end, a large max aperture (like f/1.8) will give a very shallow depth of field where a fraction of the subject may be in focus. Typically it's better to 'stop down' the aperture – like going from f/2.8 to f/3.5 – to add more bite to the details of your scene.

That's not to say you shouldn't try the extremes, but be aware of their limitations. It's a good idea to run a few tests by taking a sequence of shots of a subject, changing the aperture for each picture. That way you'll be able to work out where the sweet spot of the aperture range is.

It's worth running similar tests for focusing distance and, in the case of a zoom lens, different focal lengths. You'll probably discover that a zoom lens doesn't perform the best at each end of the zoom range. And with focusing distance, you may notice some lenses give sharper results when they're focused farther away than close up.

Do your initial zoom lens tests at the focal lengths marked on the lens barrel



Use a relatively flat object to do your aperture tests to check sharpness across the frame. Notice details get progressively softer here at narrower apertures

The need for speed

Ensure that the length of the exposure doesn't impact the overall sharpness

Camera movement can cause even the sharpest Canon lenses to deliver less-then stellar results. This is why the choice of shutter speed is such an important factor, particularly when it comes to shooting handheld. If you regularly shoot in Aperture Priority (Av) mode, then the camera will automatically set a shutter speed to complement the aperture that you've chosen. But this could be too slow to the prevent micro-movements of the camera from softening the result, or freeze the movement of the subject.

Not all scenes require pin-sharp details, of course, but we're concerned with getting the best performance from a lens here.

One option is to open the aperture to let more light into the camera, or to set a higher ISO. You can also set the ISO to Auto and let the camera automatically increase the ISO to ensure the shutter speed stays at a 'safe' level for handheld shots as the light levels drop. Enabling the Image Stabilisation function on an IS lens (or activating it in an EOS body with a built-in stabilizer) can help take the edge off vibrations caused by camera shake, but it won't be able to compensate for a subject that's moving too quickly to be frozen in time.

Get some support

Make the most of IS and tripods to avoid camera shake

To squeeze the maximum sharpness out of your lens, it needs to be supported for the duration of the exposure. Even the subtle movement of pressing the shutter release button can be enough to soften details across the image.

The latest EOS R cameras have changed the game when it comes to reducing the effects of camera shake, with in-body Image Stabilisation that can stabilize non-IS lenses, as well as working with IS lenses for an enhanced level of shake reduction. But when you want to stand back and consider the composition, or you're shooting long video sequences, or you simply don't want to increase the ISO or open the aperture in order to unlock a faster shutter speed, nothing beats a tripod.

A tripod head that has a quick release system is worth the investment, as it makes it easier to set up and, in many cases, change the orientation of the camera from horizontal to vertical without having to reframe the scene. Quick release adapters are available that can be used to modify standard tripod threaded heads.

Broadly speaking, there are two types of quick release: the clip in/clip out type, and the sliding Arca Swiss-style clamp. A sliding system makes it easier to balance longer/heavier lenses, although you need to remember to tighten the jaws of the clamp each time you set up if you don't want to see your kit crash to the floor. Some plates have safety stops built in.

A sliding system allows you to balance different combinations of lenses and cameras. Quick release plates are available for cameras, as well as for longer telephoto lenses that come with tripod collars

Lens corrections

Get sharper, less distorted, JPEGs by fixing optical problems

EVEN THE best lenses can suffer from problems that can't be eliminated through optical design. To remedy this, there are digital lens 'aberration' corrections, which are available both in-camera and in post.

Options vary according to the type of Canon EOS body you're using. For example, the beginner-friendly EOS 4000D has a single 'Peripheral illumination correction' option. This brightens the darker corners of a picture that can be obvious when it's shot with a large aperture.

More advanced cameras have a 'Lens aberration correction' menu option, which opens up a sub menu of corrections. The Digital Lens Optimizer (DLO) option automatically applies a range of clever adjustments, making details appear crisper at the maximum aperture, combating diffraction and so on.

With older Canon EF lenses, the DLO data for each lens needs to be stored in the camera. If your camera doesn't have the data you'll need to register it by attaching it to your computer and using Canon's EOS Utility software. With DLO enabled on an older EOS DSLR using EF lenses, it can take much longer to save a picture to the memory card due to the processing. That's not the case with Canon EOS R bodies and RF lenses though. The high-speed coms offered by RF mounts means there's no impact on performance when you select the Standard setting.

CLEVER AUTOFOCUS

Get smarter with focusing

Get pictures sharp in all the right places without needing to work harder

Of course, to make the most of the sharpness of a lens, the image needs to be focused in the right place. The Canon EOS R cameras have raised the bar when it comes to autofocus performance, with the EOS R6, R5 and R3 in particular offering speed and precision with new AF technology.

With their deep-learning artificial intelligence, they are able to detect and track a subject's eyes, face, head and body, with the EOS R3's Eye Control AF offering a rapid way to focus the camera in much quicker on your subject.

Few of us can probably afford such high-tech cameras, but there are ways to ensure that your existing lenses focus quickly and accurately. The first is to pre-focus at roughly the correct distance, if possible, so that the autofocus doesn't have so far to travel. Some lenses also give you the opportunity to reduce the focus distance, so that the lens doesn't have to focus back and forth from the closest focusing distance to infinity (and beyond).

To ensure that the camera locks onto the correct point, select an individual point that you can then position over the most important detail. Advanced EOS cameras have a narrower Spot AF option that gives more precision than the standard 1-point AF (although you need to be equally precise when positioning it).

For close-ups, landscapes and situations where the autofocus is continually 'hunting' for the subject, switch to MF. You can use magnified Live View display on the rear screen (and in the electronic viewfinder of a mirrorless camera) to position the sharpness quite accurately. Activating the Depth of Field preview at the same time will enable you to view the image at the aperture that the image will be taken at, allowing you to position the focus to make the most of the available depth of field.

AF setup

Use a lens's focus limiter to stop the autofocus hunting back and forth over the full focusing range. In tricky situations (below) you may have to resort to manual focus

School tip Changing lenses

Be careful when you're switching lenses...

WHEN YOU change lenses, there's plenty of opportunity for dust and debris to enter the camera and settle on the low pass filter in front of the camera sensor. The end result? Dots and marks in the same position on every subsequent shot. To avoid this, angle the camera downwards when you attach the lens, and have the lens you want to use ready, so that you're not exposing the inside of the camera for too long. Avoid doing it in windy conditions and switch the camera off before you remove and reattach a lens.

You can attach the camera's body and the lens's rear cap together to make sure that their innards are clean when you put them back, but it's always worth giving them a blast with bulb blower before you do so).

PART 9
Next issue: Get your Canon EOS set up for still life

SOFTWARE SOLUTIONS

Our Canon expert Brian talks you through Adobe Lightroom's update that takes Canon EOS R-series imagery up a gear

PhotoPlus EXPERT

BRIAN WORLEY

CANON PRO

Brian is a freelance photographer and photo tutor, based in Oxfordshire. He has unrivalled EOS camera knowledge as he's been working for Canon for over 15 years, and will help you master all EOS products.
www.p4pictures.com

Edit your photos with Lightroom

Utilize the Lightroom updates that add extra support for the EOS R-series cameras

When working with lots of images, a cataloguing tool helps make finding them simple. When that cataloguing tool can also process Raw images, it's a compelling combination.

Lightroom is used by many photographers and the latest updates for people on the Adobe subscription plan add camera profiles for the latest EOS R-series models. They've also added AI to the masking tools, meaning you might not even need to open Photoshop for most images.

I've used Lightroom as my default tool for managing my photo archive. It helps me to locate shots within the hundreds of thousands I have. Quite often when a new camera is launched, Adobe supports the Raw files, but doesn't get the best from them – and that's been the case for the EOS R5 and EOS R6.

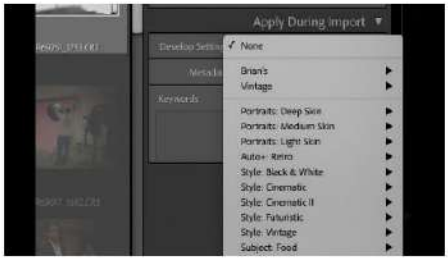
The recent update to Lightroom on both desktop and mobile has added camera profiles for EOS R5, R6 and R3 so that the colours and appearance of images should more closely match those coming from the camera and Canon's DPP software. In the past year I have often resorted to opening a Raw file in DPP, making edits and then saving a 16-bit TIFF file that I re-import to Lightroom. The addition of Lightroom's new masking tools powered by AI makes editing more capable and worth considering.

STEP BY STEP MAKE THE MOST OF THE LIGHTROOM UPDATE

Adobe Lightroom's new update adds plenty of functionality to edit your Canon images

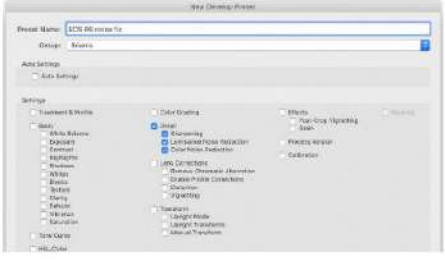
MAKE LIGHTROOM WORK SMARTER

Whichever EOS camera you decide to use, taking time to select the right camera settings and make suitable selections when adding your photos to Lightroom will save a lot of time. Remember that any Lightroom preset you use will speed up your workflow, but sometimes they will still need some fine adjustments.



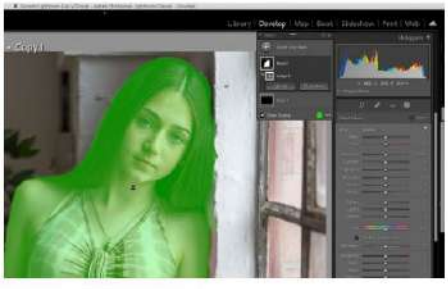
01 RECOGNIZING & USING PICTURE STYLES

EOS cameras use Picture Styles to define how images will look. When importing your images to Lightroom change the default develop settings from the Adobe default to the Camera defaults. This means that images captured with Standard, Portrait, Landscape, Neutral, Faithful and Monochrome styles will automatically have these camera profiles applied.



02 REDUCING NOISE FROM YOUR PHOTOS

Lightroom does not apply noise reduction to photographs by default, leaving high ISO images somewhat grainy. Lightroom has ISO adaptive presets to help. Select two images with very different ISO settings and different noise reduction settings. Then create a new preset and check the tick box for ISO adaptive preset.



03 SUBJECT SELECTION MASK
Lightroom's masking tool for subject selection can be a great help when editing. For portraits you can select the subject and invert the selection to enable you to blur backgrounds, making it look like you used a lens with a faster maximum aperture. You can refine the selection by combining the other selection tools to select only specific tones, such as the skin of subjects.

04 SKY & FOREGROUND SELECTIONS
Landscape photographers often use graduated neutral density filters to darken the sky, the sky selection tool is used to automatically select the sky in your photos. Once selected you can reduce the exposure or add some clarity to improve the shot. Selecting the inverse of the sky allows the foreground to be adjusted separately too.

CANONSCHOOL

EOS S.O.S

Our technical guru is here to help. No Canon conundrum is too big or small. Get in touch today at **EOSSOS@futurenet.com**

PhotoPlus EXPERT

BRIAN WORLEY

CANON PRO

Brian is a freelance photographer and photo tutor, based in Oxfordshire. He has unrivalled EOS DSLR knowledge, after working for Canon for over 15 years, and is on hand to answer all your EOS and photographic queries

Is it possible to handhold a long exposure to achieve smooth flowing water in landscape photographs?

Eamon Mason, Camarthen

BRIAN SAYS... Moving water needs to be captured with a relatively slow shutter speed, use Shutter Priority (Tv) or Manual mode to control the shutter speed, and select the lowest ISO 100. Take shots at different speeds to see how the water is captured. Slow moving water needs longer shutter speeds, more likely around 1-2 secs, not fractions of seconds, this means using whatever you can find to keep the camera still during the exposure. If you don't have a tripod, look for something solid to rest your camera on, or brace it against.

Select continuous drive mode and take several shots. The second and subsequent shots in the sequence may be sharper, as pressing the shutter may move the camera for the initial shot. Using IS on your lens, and IBIS if you have an EOS R5 or R6, will help too.

Bracing the camera against a rock kept the scene sharp enough, despite the 0.8 second handheld exposure for the water

A digiscoping setup with Canon EOS R6 fitted to a Swarovski spotting scope – with an effective focal length of more than 1000mm!

Can you explain digiscoping, as it seems to get great results with really distant subjects?

Tim Gibson, Taplow

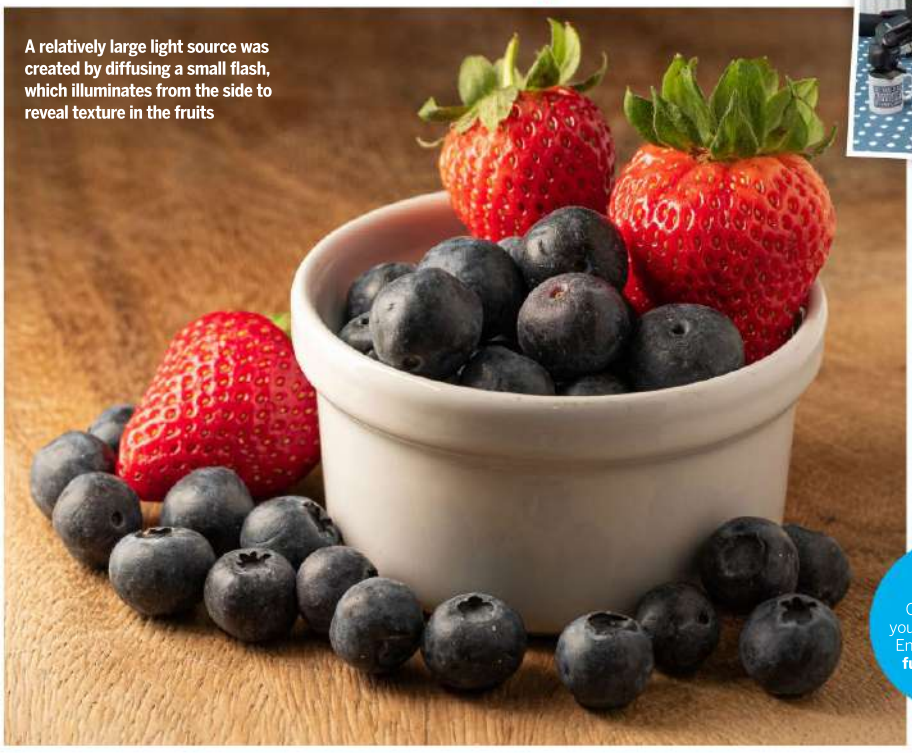
BRIAN SAYS... Digiscoping is taking photos with a digital camera attached to a telescope or spotting scope. Telescopes are used for astronomy and spotting scopes are often used by bird watchers. In effect they are very long lenses, usually with an equivalent focal length over 1000mm. Many scopes have interchangeable eyepiece optics, and this means that adapters can be used to mount a digital camera on the scope.

If you decide to give digiscoping a try, then first check with the maker of your scope, as they usually have all the right accessories to convert the eyepiece to something that will give you a way to mount your camera. You'll need a T2 mount adapter for your camera.

Since the scopes provide no digital connection to the camera, you have to set a custom function in the camera to allow it to take photos without a lens.

Captured with an EOS R6 fitted to a spotting scope, this pelican was beyond the reach of most lenses

LIGHT PHOTOGRAPHY



A relatively large light source was created by diffusing a small flash, which illuminates from the side to reveal texture in the fruits

IMPROVISE AND ADAPT

Tabletop photography doesn't need to have lots of additional equipment. For example, just using small white sheets of card and paper to change the quality and size of light is a fantastic way of learning how to use light.

Ask Brian! Confused with your Canon DSLR? Email **EOSSOS@futurenet.com**

The study of light

Winter's colder, darker days are the perfect time for you to learn all about lighting

One of the most valuable topics for photographers to study is light. The word 'photography' is derived from the Greek words for drawing with light, so surely an understanding of light is a fundamental skill that will make you a better photographer. I suggest you use the colder, darker winter time to study and experiment with light at home.

There are three essential elements to consider about light, the amount, direction and quality. Amazingly, a lot of photographers only worry about enough light, letting their camera make settings in response to the quantity of light. Fortunately, cameras are pretty good at determining the amount of light and making sensible choices for shutter speed, aperture and ISO. For some, that's all that matters.

At this time of year you may see low-angle sunlight shining in your eyes as you drive early in the morning, or at the end of the day. This same light creates long shadows that are great for revealing texture and relief in landscapes and rugged surfaces. The direction of the light is an essential component of light, and you can either move your position in relation to it, or for some lights like flash, you can even move them, creating a direction of your own choosing.

The third parameter is quality, this is the apparent size of the light source, and the colour. Apparent size is an important concept, for a small subject such as a coin, if the light is close and large it is termed 'soft.' A large, close light source will illuminate the subject from multiple directions, and this fills in shadows that reveal texture. Winter sun on a clear day is a small light source, so creates hard-edged sharp shadows. The colour of light is also important, be it cool, warm or intentionally coloured.

Regardless of what you photograph, fully considering the three light factors will make your photos better. You may not be able to control them all if you are a natural-light photographer, but you can change how you position your camera in relation to the light and subject. Some say flat light is boring, so why not use an additional small light to add contrast and texture to the important part of the picture. If you spend time creating the light you want, then you are far more able to recognize the situation where the available light already meets your needs, and the end result is taking better pictures.

When would you use a tilt-shift lens, apart from architectural and property shots?

Brian Pearce, Dorchester

BRIAN SAYS... Tilt-shift lenses have two major functions, and for architecture it's usually the shift movement that is used to ensure that the vertical edges of buildings are kept vertical. The tilt movement has quite a different effect that can maximize or minimize depth of field. For landscape shots you might tilt a lens down and get almost infinite depth of field at f/8. For portraits, a tilt with wide-open aperture can be used to place sharp focus on the eyes and smooth out other parts of the face. Product photographers are the ones most likely to use a mix of tilt and shift movements in a single image. Ultimately a tilt-shift lens is hugely versatile and enables photos to be captured that could not be achieved with in Photoshop.

I've seen some people use an extra monitor connected to their EOS cameras for movie shooting, why is this needed?

Wendy Freeman, Westwick

BRIAN SAYS... Sometimes the external screens are simply larger displays than the camera screen, making it easier to see. Often these displays add capabilities, such as focus peaking to help with focusing and correct exposure. Often the larger screen means alternate composition guides, even multiple ones can be used to frame the scene correctly, so that the footage can be used on many different aspect ratio screens.

Devices, such as those from Atomos, can also record the movie to an SSD inside the unit. Recording movies on an external device allows other industry standard movie formats, like ProRes, to be used, and also other colour sampling methods for better colour quality. ProRes is used when editing, so capturing movies in ProRes saves time in converting formats and aids colour consistency, even across various different brands of camera.

QUICK FIXES

Why does the EOS R5 have two different resolutions for 4K and 8K movies?

Sam Russell, Elmdon

BRIAN SAYS... The video capability of the camera makes it suited to a wide range of movie shoots, the camera offers the two most popular aspect ratios used for consumer displays and movie theatres.

How do you mount a ring-flash on the EF 100mm f/2.8L Macro IS lens?

Tyler Jonckers, Hagley

BRIAN SAYS... The original EF 100mm macro lens had a grooved ring around the front element that fitted directly in the ringflash, but the bigger front element of the EF 100mm f/2.8L lens is too large to fit. You need the Macrolite Adapter 67C that screws in to the lens filter thread.

Why am I unable to select ISO100 on my camera, ISO 200 is the lowest setting?

Nathan Spack, Barnsley

BRIAN SAYS... It's possible you've enabled Highlight Tone Priority, or could be that you have limited the range of ISO settings in menu.

The latest Speedlite and cameras use updated terminology for off-camera flash settings

Why doesn't the terminology for flash control match my Canon camera and Speedlite? One uses Sender, but the other uses Master?

Austin Sabel, Mallaig

BRIAN SAYS... When the Speedlite EX system launched in 1998, Canon used the terms Master for the controlling unit and Slave for the remote units. In recent years the naming has been revised to Sender/Commander and Receiver/Remote respectively. Depending on which camera and flash systems you have it is possible that you'll see different names used on each device.

What makes the Canon Speedlite EL-1 so special and expensive compared to a 600EX II-RT?

Daniel Nielson, Paddington

BRIAN SAYS... Indeed, the Speedlite EL-1 is quite expensive, and it's targeted at press and action photographers who need rapid flash recycling and the ability to use flash with continuous shooting. The EL-1 is powered by a modified version of the LP-E6 battery, and has a built-in cooling fan to rapidly cool the flash after repeated use at high-power levels. There's no real increase in guide number, so for general photography, a Speedlite 600EX II-RT is a better buy.

Auto switching cards maximizes storage capacity, so you can keep shooting without interruption, until both memory cards are full

My Canon camera has two memory card slots and there are several options to choose from that affect how each card is used, what's the best choice?

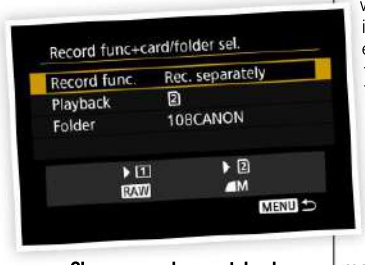
Abigail Payne, Newbury

BRIAN SAYS... Recently the choices have expanded with the EOS R5/R6 cameras, but all cameras with two card slots have four main ways of working with two cards. But there's no best choice to recommend for all.

The default setting is to store images on one card until it fills up. At this point the camera displays a prompt asking if you want to switch to the second card. This might be annoying if you're part way through a continuous sequence of frames. In such situations auto switch card is much better. With auto switch card chosen the camera will automatically switch to the next card when one is full. By using two large capacity cards you can shoot all day and have little chance of worrying about filling a card. This is the option that I use.

The next two options allow you to write to both cards at the same time. Record separately is used when you want to put JPEG images on one card, and Raw on the other. It's best to put Raw on the fastest card as the files are larger. If either card fills the camera stops recording images until the card is swapped out. Record to multiple is for critical shots, and a wedding photographer favourite, as each file is written to both cards. Even if you shoot RAW + JPEG each card will have both the Raw and JPEG images. This is often used to mitigate the risk of a single card failing.

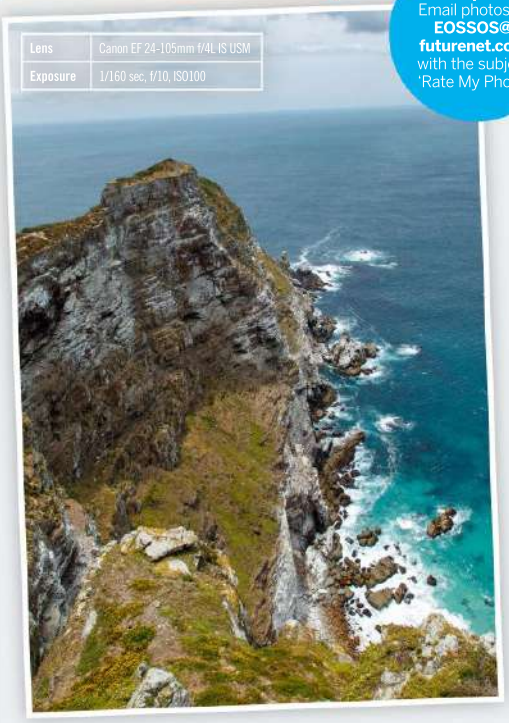
EOS R5/R6 add the option to store movies on card one and still images on card two. EOS R5 can store a lower resolution movie clip on the SD card alongside a high resolution movie on the CFexpress card.



Choose record separately when you want to put Raw images on one card and JPEG on another

RATE MY PHOTO

Get critiqued! Email photos to **EOSSOS@futurenet.com** with the subject 'Rate My Photo'



Cape Point

KEITH THOMPSON, MANCHESTER SAYS... I took this shot at Cape Point in South Africa while on holiday. I used a 24-105mm lens and, as I was travelling with minimal gear kit, I was not able to take a tripod. This meant I had to handhold the shot, but fortunately it was a bright day, so I could use a fast enough shutter speed and still keep a low ISO even with the aperture set narrow at f/10 for good depth of field. On my return from the trip I edited the shot in Lightroom to bring out the vibrance and details of the landscape.

BRIAN SAYS... The top-down viewpoint gives a good sense of scale to the landscape, and you've got nice texture throughout the frame. There's great depth of field in this shot, with the sharpness only falling off in the far distance of the sea and sky. I like the inclusion of just a strip of cloud at the top and you've managed to retain some detail in the clouds. The light on Cape Point is a mix of shade and full sun, giving quite bright highlights in the white water in the lower right corner of the frame and also the foreground rocks. I suggest you try to pull the brightest highlights back a little, as this would avoid them being magnets to draw the eye and stop it taking in the whole scene.

02

05

GEAR UPDATE

Our round-up of the latest digital photography must-haves

01

04

06

01 Canon RF 5.2mm f/2.8L Dual Fisheye

Bringing 3D VR to your EOS R5

£2099/$1999

www.canon.co.uk

THIS STEREOSCOPIC 180° VR lens for video and stills is aimed at everything from the healthcare and manufacturing industries to filmmakers and VR content creators. The EOS VR system features a pair of hyper-wide 190° field of view lenses, which project two circular equirectangular images onto a single camera sensor, creating perfect image alignment and synchronization. A pair of precisely synchronized electromagnetic diaphragm units control the aperture for each lens. However, compatibility is currently limited exclusively to the Canon EOS R5.

02 Canon Zoemini S2

Canon improves its instant camera/printer

£159/$179

www.canon.co.uk

A SUCCESSOR to the Zoemini S, the S2 is a minor upgrade on that camera's basic formula. It's still at heart an 8Mp digital camera, but one with a zero-ink printer attached. Once the shutter is pressed, the camera will print your photo on Zink paper. What it may lack in the lo-fi charm of a traditional instant camera, Zoemini S2 makes up for in the affordable convenience of its digital printing. If you forget to load paper or run out, don't worry – all images can be saved to a microSD card, so nothing will be lost.

03 Joby Podzilla & Compact tripods

New simple and ultra-portable supports

From £37/$40

www.joby.com

DESIGNED FOR ease of use, Podzilla mini tripods are a development of Joby's famed Gorillapod design. Based around an aluminium core, the legs are covered in a grippy rubber outer, making them flexible and easy to position. Each leg is fully articulated, to allow vloggers to achieve a stable, level platform for recording, whatever surface they're placed on. Podzilla is available in Medium and Large sizes, and can support everything from a phone to a small mirrorless camera. Joby's new Compact range of super-light tripods consists of Light, Action and Advanced models, each designed for different shooting styles, locations, and types of content creation. A Compact 2-in-1 Monopod completes the line-up.

04 Lowepro PhotoSport PRO AW III backpacks

Eco-friendly photo backpacks

From £429/$469

www.lowepro.com

LOWEPRO HAS announced new photo backpacks made from 85% recycled fabric, perfect for hiking and camping. The PhotoSport PRO 55L AW III and PhotoSport PRO 70L AW III can both carry a full-frame mirrorless or DSLR camera with a vertical grip attached and a 70-200mm f/2.8 telephoto lens mounted. Lowepro tells us there is also room for two extra lenses or a portable camera drone, plus space for accessories like charging cables and memory card readers.

05 Manfrotto Move Quick Release Catcher

A QR system for tripod heads!

From £92/$99

www.manfrotto.com

WE'RE ALL used to quick release plates for cameras, but if you want to swap over your tripod head, you're still faced with a tedious and fiddly unscrewing process. The Manfrotto Move addresses this with the Move, which attaches to your tripod where you would normally attach the head. You then screw its quick release plate into your tripod head, drop the lug on the fixing plate into the Move and push to snap it in place.

06 Vanguard's VEO-M12 bar

Mount four cameras on one tripod

£119/$129

www.vanguardworld.co.uk

IF YOU'VE spent a lot of time setting up a shot, particularly one that's going to be over in an instant, it can be useful to have a couple of cameras lined up. With this new multi-mount bar, you can have a total of four cameras or accessories installed on a single tripod. It can be attached to any tripod with a 1/4-inch or 3/8-inch thread, and then you're free to mount cameras or accessories like spotting scopes, lighting and binoculars, up to 10kg in total.

Help me buy...
Camera straps

Ten of the best camera straps that offer comfort and features

THE BEST camera straps are so much better than the ones that come free with your EOS camera. While you might be wondering why it's worth spending extra money on a strap when you likely already have something that's perfectly serviceable, the truth is that a better camera strap can be well worth the extra initial outlay.

Think about your neck and shoulders. When you're carrying a camera around, particularly with a heavy lens over long distances and extended periods of time. After all, if carrying your camera around your neck becomes uncomfortable, then you're less likely to carry it around in the first place. We've included straps of all types, including some dual-camera harnesses, so all camera users should be able to find something that suits their own personal style and shooting needs.

FIVE THINGS TO LOOK OUT FOR

01 Weight dispersal
The wider the strap the more comfortable it will be, but this adds to the overall bulk.

02 Slide on in
Slide straps are worn across the body and dangle the camera upside-down, attached via the tripod socket.

03 Two's a crowd
Dual harnesses hold two cameras at the ready, and are ideal for the needs of fast-paced wedding and events shoots.

04 Get comfy
Adjustable straps are important for ensuring a comfortable fit.

05 Does this match my eyes?
Colour options are as important as comfort to many photographers – straps don't have to be boring black!

Woolnut Camera Strap

£67/$92 www.woolnut.com

THIS CAMERA strap from Woolnut is beautifully designed and manufactured. The outside of the strap is made of a signature tanned full-grain leather that comes in brown or black, while the inside is lined with a wool felt. You can adjust the length for use as a shoulder or neck strap. The neck part has soft padding, while the ends have added metal rings for compatibility with most cameras. While the strap comes at a premium price, we feel it's worth every penny.

PROS: Comfortable to use; fantastic quality
CONS: A little on the expensive side

Think Tank Camera Strap v2.0

£22/$29 www.thinktankphoto.com

THIS IS the most compact strap on our list, but this is due to a design that's left the strap about as wide and comfortable as a standard neck strap. However, the Think Tank Camera Strap v2.0 does have a grippy coating on both sides that enables it to double as a shoulder strap. Meanwhile, extra hardware can connect it to your backpack straps. It works well as part of a broader Think Tank system, so it's worth considering if you have one of their camera bags.

PROS: Non-slip coating on both sides; compact
CONS: Narrow strap can cut into your shoulders

Peak Design Slide Lite

£48/$65 www.peakdesign.com

THE SLIDE exudes quality with a seatbelt-style strap and premium fittings, which include quick-release buttons to detach the strap. This is the Lite version of the Slide, and is designed for mirrorless and small DSLR setups, first and foremost. The Peak Design Anchor Link connection system makes it easy to switch the strap between sling, shoulder and neck. The two-point connection system is also strong, with the anchors rated to take up to 90kg of kit.

PROS: Strong build quality; very easy to adjust
CONS: A little bulky when packed down

BlackRapid Sport Breathe

£73/$78 www.blackrapid.com

DESIGNED to be worn across the body, the BlackRapid Sport Breathe drapes from the left shoulder to the right hip (there is also a version for left-handed photographers). This means that you can rest your camera upside-down at your hip, but it's within easy reach once you need to start shooting. Perfect for sports or adventure photographers who want to move quickly without fussing about a camera hanging around their neck, slide camera straps are a great alternative.

PROS: Spreads load; lefty version available
CONS: Quite expensive

Gitzo Century Leather Neck Strap

£109/$130 www.gitzo.com

THE GITZO Century Leather Neck Strap is made from real Italian leather, so some may not feel comfortable using it. If leather doesn't bother you, then you'll enjoy a premium, well-made strap with a comfortable design that's resistant to scratches. It's well suited to carrying a decent amount of Canon EOS mirrorless kit, and the G-Lock buckle closing system is compatible with other Gitzo Century straps. It's on the pricier end, but if you're someone who enjoys the finer things in life...

PROS: Top craftsmanship; anti-scratch materials
CONS: Leather not for everyone; pretty pricey

Capturing Couture 2-inch Strap

£71/$39 www.capturingcouture.com

WITH A vintage design ripped straight from '70s fashion, this retro-inspired camera strap is perfect for the fashion-forward photographer. The outside of is made from decorative polyester ribbon (the image above is in Melody, but you can choose from a variety of designs), the inside has neoprene padding covered with polyester velvet to help provide ultimate comfort for your neck. With a maximum strap length of 59-inch, you can even wear it across your body, messenger-style.

PROS: Retro design; comfortable padding
CONS: Not much padding; hard to get outside US

Op/Tech Pro Loop Strap

£18/$26 www.optechusa.com

THIS WELL-PRICED strap features a 6cm-wide nylon/neoprene neck pad that really spreads the load out, although its square-cut edges can rub. Two clips detach the pad, leaving the connected ends able to join and form a hand strap, albeit one that's on the long side.

With this level of versatility, Op/Tech straps are very popular with outdoor photographers, and this version is no exception, especially with it being so lightweight at just 82 grams.

PROS: Wide neck pad; affordable
CONS: Square-cut edges tend to rub

Artisan & Artist Silk Camera Strap

£149/$215 www.artisan-n-artist.com

MADE FROM silk, camera straps don't get much more luxurious than this. This corded design comes from Kyoto in Japan, and is crafted using the braiding technique known as kumihimo – which is used as a belt in Japanese ceremonial clothing. The silk threads are designed to make the strap especially comfortable around the neck. With leather flaps to protect the attachment rings scratching your camera, these straps are available in black, blue, silver, khaki or red.

PROS: Traditionally crafted design
CONS: Extravagant price tag

Op/Tech Dual Harness – Regular

£35/$60.50 www.optechusa.com

DUAL camera harnesses are great when you need to switch between cameras without having to mess around with camera bags or pouches. The Op/Tech Dual Harness enables you to comfortably carry two cameras totally hands-free. With a U-shaped neoprene neck pad, this harness is designed to evenly distribute the weight of your gear while reducing shock. There's an adjustable back section and sternum strap that helps you fit the harness comfortably and evenly.

PROS: Great for carrying two cameras
CONS: Connects via eyelets, not tripod plate

Coiro Dual Harness Strap

£90/$90 www.coiroshop.com

THIS LEATHER dual harness is designed to fit both you and your cameras perfectly with adjustable straps. Made from leather, the straps attach to your cameras via both a tripod plate and metal eyelets. This means you've got the ultimate security to ensure your cameras don't meet a sticky end on the pavement.

Available in brown and black, this dual camera harness is ideal for wedding photographers who need both comfort and style in their strap.

PROS: Carries two cameras; easy access to kit
CONS: A little expensive; tricky to get outside US

STUDIO FLASH		LOCATION FLASH			LED PANELS		
Elinchrom D-Lite RX 4/4 To Go £769/$800	**Interfit Honey Badger 320Ws 2-Light Kit** £549/$770	**Elinchrom ELB 500 TTL To Go Set** £1599/$1900	**Interfit Honey Badger Unleashed** £800/$600	**Profoto B10 Plus** £1895/$2195	**GVM 800D RGB LED Video Light** £110/$99	**Neewer 660S** £74/$76	**Rotolight AEOS** £750/$995

THE LIGHT FANTASTIC

Photographic lighting comes in all shapes and sizes these days, so what's the best fit for you?

For a home-studio setup, or if you're shooting indoors on location, there's no beating the power and versatility of a conventional mains-powered flash kit. Prime options include the likes of the Elinchrom D-Lite and Interfit Honey Badger twin-head kits, which are fairly compact and easy to carry around, yet quick to set up and straightforward to use.

The only real problem is if you want the versatility of being able to shoot outdoors, using a flash head to supplement natural daylight. Mains-powered kits won't be much use if there's nowhere to plug them in, but there's a growing range of battery-powered flash heads that are as powerful as most studio heads, and vastly more so than flashguns. When supplementing the sun or even overpowering it to turn day into night, you're only likely to need a single flash head but twin-head kits are also widely available.

The not-so-secret third option is to go for a constant light. Traditionally, lamps often used halogen bulbs and ran horrendously hot, but there's been something of an LED revolution in recent times. Ultra-bright LEDs laid out in a matrix across a rectangular or circular panel can be a viable alternative to a flash head, although the maximum light output will be much lower. Plus points include a 'what-you-see-is-what-you-get' approach to lighting a subject and, when shooting video, constant LED lighting is perfectly viable whereas a flash head will be entirely useless.

ELINCHROM D-LITE RX 4/4 TO GO £769/$800

A powerful, immaculately engineered mains-powered studio kit, Elinchrom's D-Lite takes a lot of beating

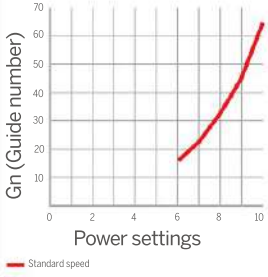
Elinchrom's D-Lite flash heads and kits have earned a somewhat legendary status over the years, and rightly so. Build quality is excellent, they're easy to use, and they deliver superb performance. Kits are available with premium quality softboxes or brollies, robust lighting stands, wireless hotshoe-mounting triggers and smart padded carrying cases.

The D-Lite RX One head is ideal if you want to use wide apertures for shrinking the depth of field, whereas the kit we chose for this test is based on a pair of D-Light RX 4 heads, the most powerful in the range. It's supplied with a 66cm square softbox and a 56cm octagonal softbox, as well as a deflector that enables a beauty dish effect.

The supplied EL-Skyport Transmitter Plus radio-frequency trigger enables remote adjustment of flash head settings and has a range of up to 200m. Alternatively, you can upgrade to the Elinchrom HS Transmitter which also enables high speed sync flash.

Performance

Elegant and intuitive, the push-button control panel enables easy adjustment of power output through a 5-stop range, in 1/10th stop increments. Selection of proportional, full, low and no modelling lamp output is also simple, using a conventional 100W bulb. An auto-sensing cooling fan is built into the head. Output is remarkably consistent on a shot-to-shot basis, and power adjustments are highly accurate.



FEATURES

01 There's a user-replaceable flash tube and a 100W modelling lamp.

02 For mounting brollies, there's Elinchrom's usual 7mm slot.

03 A secondary slot for brollies with a more standard 8mm shaft is included.

04 Each head has a built-in RF receiver for adjustments and triggering.

05 The controls on the back panel are simple and effective.

VERDICT

FEATURES ★★★★★

BUILD & HANDLING ★★★★★

PERFORMANCE ★★★★★

VALUE ★★★★★

OVERALL ★★★★★

HOW WE TEST

We measure light output through the available power ranges and more besides

We set up and use lighting kits with all of their supplied accessories. The build quality and operation of all component parts are checked, along with all of the available features and functions. We test the complete power range of each flash head and LED panel, with a standard reflector fitted, measuring the intensity of output at a distance of one metre, using a Sekonic flash/incident light meter. The results are given in f-stops required for a correct exposure, using a sensitivity of ISO100, which also equates to the Gn (Guide number, metres/ISO100).

For flash heads, we also measure the recycling speeds, at all major increments through the power range. TTL flash metering and HSS modes are tested, where available, using the flash kit supplier's optional remote triggers. All lighting kits are checked for ease of use when making adjustments to power output and other available modes and settings.

INTERFIT HONEY BADGER 320WS 2-LIGHT KIT £549/ $770

A fearsome mains-powered studio kit from Interfit, the Honey Badger punches above its small size

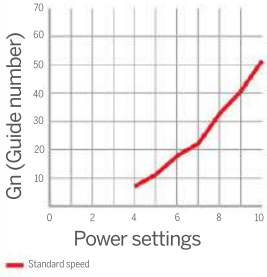
Taking its name from reputedly the world's most fearless animal, Interfit's Honey Badger head makes a bold entrance in bright yellow and black, and has a strong max power rating of 320Ws which isn't far off the Elinchrom D-Lite kit on test. It's a bit more noisy in operation because the small heads have cooling fans that run full-time, rather than just when the going gets hot.

Various kits are available with one or two heads, and a choice of reflectors and brollies or pop-up softboxes. The softboxes are quick to set up but somewhat fiddly to fold down again.

The kit on test is the dual head option with softboxes and a wireless remote. This enables you to adjust flash head settings and trigger them from the hotshoe mounting transmitter. The max range is about 90m, which should be ample for most scenarios.

Performance

Maximum flash intensity is a little down on the Elinchrom D-Lite 4, which isn't surprising given that the Honey Badger has a 320Ws rather than 400Ws rating. At the bottom end of the range, flash output is more gentle, equating to an aperture of f/7.1 in our standard one-metre test at ISO 100, compared with the Elinchrom's f/16 (with standard reflector and no brolly or softbox). Recycle speeds are pretty much identical for both competing heads. The Honey Badger has proportional, full, manual and off options for its modelling light but this time it's an LED rather than conventional bulb.



FEATURES

01 The Honey Badger mains-powered head is smaller than the Elinchrom D-Lite.

02 A frosted dome at the front protects the flash tube and LED modelling lamp.

03 A built-in fan runs continuously to dissipate heat.

04 The Honey Badger has a push-button control panel.

05 A built-in RF receiver enables remote adjustments and triggering with a 90-metre range.

VERDICT

FEATURES ★★★★½

BUILD & HANDLING ★★★★☆

PERFORMANCE ★★★★½

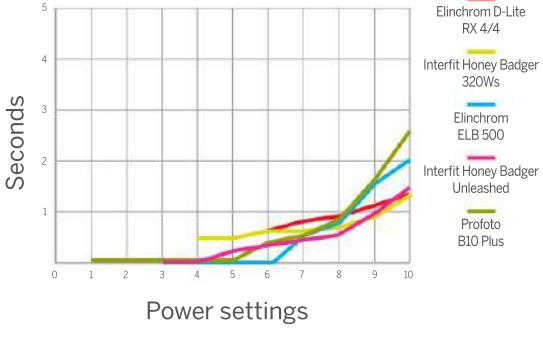
VALUE ★★★★☆

OVERALL ★★★★½

RECYCLING SPEED

Quick-shooters may need to pause for thought when you get to those higher power settings

The two mains-powered kits will recycle in about half a second at the lowest power setting, and 1.3 seconds after a full-power flash. The battery powered flash kits recycle almost instantaneously at low power settings. At the top end of its range, the Elinchrom ELB 500 takes 2 seconds to recycle, although this stretches to 2.8 seconds in 'eco' mode. At the upper end of the range, the Honey Badger Unleashed recycles faster than the Profoto B10 Plus, but has a lower 250Ws.



ELINCHROM ELB 500 TTL TO GO SET £1599/$1900

Based on the first Elinchrom flash head to harness IGBT technology, it's an epic battery-powered kit

Traditionally, Elinchrom has stuck with conventional variable-voltage flash for its battery-powered heads. This enables optimum performance and colour consistency throughout the output range. A downside, however, is that three variants of each head are required for standard, high speed sync and ultra-short-duration flash. The ELB 500 employs IGBT (insulated-gate bipolar transistor) technology, as used in the other battery-powered kits on test.

The Elinchrom features a separate flash head and power-pack. The latter includes a control panel for making all flash head adjustments, and the two components are joined together with a heavy-duty umbilical cord.

As with other IGBT kits on test, the Elinchrom enables TTL (Through The Lens) flash metering if you add the optional RF transmitter. In this case, you can go for Elinchrom's 'Pro' Skyport trigger or the Phottix Odin II TTL trigger.

Performance

Max power output in standard flash mode is the strongest of any battery-powered kit on test, although you can't turn down the wick as much as the others on test. An 'Action' mode gives an ultra-short flash duration of as little as 1/20,000th of a second, for freezing motion, but there's the usual drop-off in power when switching to high speed sync mode. Recycle speeds are quick and the LED modelling lamp is bright enough for close-range video capture.

FEATURES

01 The flash head is relatively tiny.

02 An optional 'Q-Reflector Adaptor Mk II' enables use of Elinchrom's full range of light shapers.

03 The head connects to the power pack via a 2.5m cable, and extension cables are also available.

04 Pricier kits include two heads rather than one.

05 The power pack is compact and has an intuitive on-board control panel.

VERDICT

FEATURES ★★★★★

BUILD & HANDLING ★★★★★

PERFORMANCE ★★★★★

VALUE ★★★★☆

OVERALL ★★★★★

IGBT enables advanced flash modes like TTL, high speed sync and ultra-short duration flash

IGBT IS THE WAY FORWARD

Most current battery-powered flash kits now use IGBT technology

To adjust the power setting in conventional studio flash heads, you're basically increasing or decreasing the voltage to which the capacitors are charged. When they discharge to give the flash output, greater levels of charge result in a brighter flash. A major advantage is that colour temperature should remain very constant throughout the entire (but relatively limited) power range. Battery-powered flash heads are increasingly adopting the alternative of IGBT (insulated-gate bipolar transistor) technology. As used in flashguns, this acts as an ultra-high-speed switch for turning power on and off. The capacitors are fully charged and the transistor controls the duration of the output. At the minimum power setting, the pulse of light will be very short. At the maximum power setting, IGBT remains inactive, enabling the full charge of the capacitors to be deployed.

INTERFIT HONEY BADGER UNLEASHED £800/$600

The 'unleashed' edition of the Honey Badger takes Interfit's show on the road with clip-in batteries

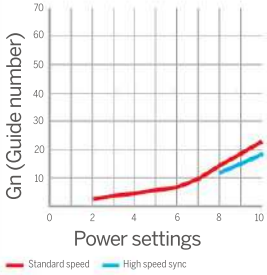
Slightly larger and nearly a kilogram heavier than the mains-powered Honey Badger head, the 'Unleased' edition runs on a rechargeable battery instead of being mains-powered. Unlike the Elinchrom and Profoto battery-powered kits, you can't run this one from the mains, so you might need to add a spare battery or two to your kit at £65/$66 each.

The kits themselves are available in a variety of options, featuring two heads and the option of brollies, softboxes and RF remote triggers. The kit we tested includes two heads, batteries and mains chargers, two 60cm pop-up softboxes and a sturdy backpack. The optional Interfit HSS TTL remote trigger is similarly great value at £80/$110 and, as its name suggests, enables TTL and high speed sync flash modes.

The weight gain compared with the Honey Badger mains-powered kit is mostly due to the battery clipping into the head itself, like with the Profoto kit on test. It's also a little larger and, unlike the mains kit, there's no cooling fan. This enables the Unleashed edition to be virtually silent in operation.

Performance

The 9-stop power range is impressive, with very subtle output available at the bottom end. However, with its 250Ws rating, max power output is considerably down on the other battery-powered kits on test. That said, it's the only battery-powered kit in the group that features two flash heads rather than one, making it excellent value at the price.



FEATURES

01 Appearance is similar to the mains-powered Honey Badger, but this one's a bit larger.

02 A built-in RF receiver enables TTL and high speed sync flash modes with the optional trigger.

03 The battery has enough stamina for up to 430 flashes.

04 You can't run the head from the mains if the battery dies.

05 The control panel is simpler than the mains edition.

VERDICT

FEATURES ★★★★½

BUILD & HANDLING ★★★★☆

PERFORMANCE ★★★★☆

VALUE ★★★★★

OVERALL ★★★★½

TRIGGER HAPPY

A radio frequency trigger delivers more than just convenience

As well as removing the risk of a trailing sync cable trip hazard between your camera and a flash head, a wireless trigger typically enables you to alter the power output of one or more flash heads remotely. There's even more versatility when using a Canon-dedicated remote trigger with one of the battery-powered flash kits on test. They enable TTL flash metering, so that power output is set automatically, just like when using a flashgun.

High Speed Sync also becomes available, so that you can use fast shutter speeds exceeding the flash sync speed of your camera. This can often be necessary when shooting outdoors under bright sunlight. Preferred triggers are the Phottix Odin II TTL (£125/$180) for the Elinchrom ELB 500, the Interfit HSS TTL (£80/$110) for the Honey Badger Unleashed, and the Profoto Air Remote TTL (£359/$439) for the B10 Plus.

PROFOTO B10 PLUS £1895/$2195

The portable 'Plus' version of the B10 is bigger and more powerful than the original version from Profoto

Larger and 400g heavier than the standard Profoto B10, the 'Plus' edition is twice as powerful, at 500Ws. Like the Honey Badger Unleashed, the battery clips into the head instead of being housed in a power-pack but you can power the head from the mains, as well as from the battery.

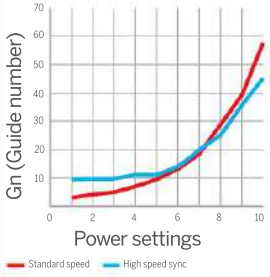
The kit includes a head, stand adaptor, battery, battery charger and a padded carrying bag. A twin head kit is also available. The kits are pricey, as are the accessories. For example, the head doesn't feature a sync socket and the Profoto Air Remote TTL trigger (sold separately) costs an extra £359/$439. Similarly, Profoto's standard OCF Magnum Reflector costs a further £195/$219. Thankfully, all components are of extremely high quality.

Rear-panel controls are simple and intuitive, once you realize that you need to press and hold the white flash test button for a few seconds to switch the head on and off.

Another nice touch is built-in Bluetooth, linking to a companion app for Apple and Android devices.

Performance

The 10-stop power range is generous with impressive maximum and minimum levels. Power isn't diminished in ultra-short-duration Freeze mode and drops off less than in the Elinchrom in HSS mode. The powerful LED modelling light is useful for stills and video and comes with adjustable colour temp. Recycling speeds are quick but battery life is limited, at 200 full-power flashes.



FEATURES

01 This one can easily be held in your hand.

02 With adjustable colour temp, the LED modelling lamp is useful for close-range stills and video.

03 Ramp up the LED modelling lamp and the heat-sensing cooling fan kicks in.

04 Rear-panel controls are minimalist but intuitive, with a clear, illuminated menu.

05 Bluetooth connects to a companion app for Apple and Android devices.

VERDICT

FEATURES ★★★★★

BUILD & HANDLING ★★★★★

PERFORMANCE ★★★★★

VALUE ★★★½☆

OVERALL ★★★★½

LOCATION FLASH STAMINA

How long before your battery-powered flash head runs out of juice?

The stamina of the battery-powered flash heads in this test depends on the output power you're using. For example, when driving a single Elinchrom ELB 500 TTL head at its minimum power setting, the power-pack will last for as many as 28,000 flashes before it dies. Turn it up to max output power, and the battery will run flat after about 400 flashes.

It's a more generous 430 flashes for the Honey Badger Unleashed (which has half the max power rating) and a more meagre 200 flashes for the Profoto B10 Plus. Naturally, you can buy extra batteries so you can swap them out. You can also run the ELB-500 and B10 Plus direct from the mains, although this option isn't possible with the Honey Badger Unleashed.

The Honey Badger Unleashed can't run on mains power. Additional batteries cost £65/$66 each

GVM 800D RGB LED VIDEO LIGHT £110/$99

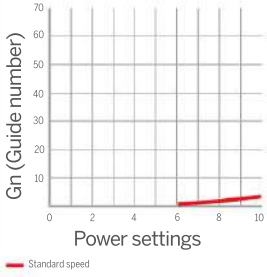
It's not overly powerful but this RGB LED panel delivers a full colour range along with app control

There are some swings and roundabouts in this kit, compared with the Neewer LED panel on test. For features, the GVM (Great Video Maker) wins hands down. As well as the usual bi-colour option based on 168 white and yellow LEDs, giving a temperature range of 3200-5600 Kelvin with an impressive CRI of >97, it also boasts 84 RGB LEDs. This enables a wide spectrum of colours with adjustable hue and saturation, which you can dial in with on-board controls or via Bluetooth with the companion app.

Command and remote modes are also available if you buy more than one panel and the GVM also features a range of special effects for video. There are eight effects in total, comprising of TV, candle, emergency vehicle, lightning, paparazzi, disco, party, and bad bulb. Like the Neewer kit, the GVM comes with a U-mount bracket, barndoors, white diffusion panel and power supply, as well as a facility for adding rechargeable Li-ion batteries.

Performance

Naturally, the bi-colour LED count of 168 is a lot smaller than the 660 of the competing Neewer. Sure enough, the max output level is disappointing, equating to just f/2.8 and shrinking to f/2.2 when using the diffusion panel or either end of the bi-colour temp range. What the GVM gains in trick features, special effects and Bluetooth connectivity, it loses in maximum power output. Still, there's sufficient power for many applications and it's great value.



FEATURES

01 A full-colour illumination range is based on 168 white and yellow LEDs, plus 84 RGB LEDs.

02 The sturdy casing is built from aerospace-grade aluminium alloy.

03 A display makes it easy to keep tabs on setting, and remote app control is there.

04 Buttons let you cycle through modes.

05 The panel comes with barndoors and a clip-in white diffusion panel.

VERDICT

FEATURES ★★★★½

BUILD & HANDLING ★★★★☆

IMAGE QUALITY ★★★½☆

VALUE ★★★★★

OVERALL ★★★★☆

POWER TO THE PEOPLE

Invest in optional batteries and you can use an LED panel anywhere

Popular for everything from bicycle lamps to lighting, recent designs of LEDs are renowned not only for their bright illumination but also for their frugal running costs. They also require a low-voltage power supply. All of this makes them suitable for running on batteries and, while the three LED panel kits on test come with mains electricity power packs, rechargeable Li-ion cells are available as extras. Rotolight's V-mount Li-ion battery for its AEOS panel is pricey at £290/$300, but the GVM and Neewer panels can run on a pair of commonplace Sony NP-F970 type rechargeable Li-ion batteries. Many copies of these are available at budget prices, like the Powerextra 2x NP-F970 8800mAh twin pack, which comes with a dual charger at around £46/$55.

NEEWER 660S £74/$76

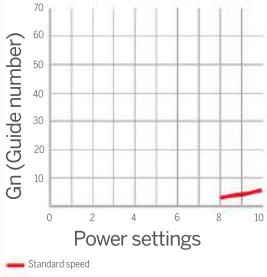
Cheap but powerful for an LED panel that just about misses a few extra tricks

Neewer make a few '660' LED panels, including options with built-in RF remote control or wireless connectivity for smartphones via a companion app. There are also bi-colour and full RGB options available, the latter similar to the GVM LED panel on test. The upgraded 660S model is the cheapest in the range but is still based on an array of 330 white and 330 yellow LEDs, enabling a colour temp range of 3200-5600 Kelvin and a CRI rating of >95.

The kit includes the panel itself with a set of barndoors, an adjustable U-mount bracket, a mains power supply and a clip-in white diffusion panel, all wrapped up in a good-quality carrying bag. The panel can also run off a pair of NP-F970 rechargeable Li-ion batteries, available as a separate purchase. As usual for this type of kit, you'll need to buy the lighting stand separately. Neewer actually sell pairs of mini 50cm/20-inch tabletop stands, which are neat for using the panel as a quality lighting solution for Zoom meetings and the like (see 'Supporting roles').

Performance

We rarely criticize LED panels for not being dim enough but, when using both banks of white and yellow LEDs, the stepless power knob kicks in at a rating of f/2.8, which is actually quite bright. Top-end output equates to f/5.6, making the Neewer the most powerful LED panel in the group, dropping to f/4.5 when using only one bank of LEDs at either end of the colour temperature range.



FEATURES

01 The Neewer comes with barndoors and a white diffusion panel.

02 You can power the Neewer with optional NP-F970 batteries.

03 There's a total of 660 LEDs, with 330 white and 330 yellow.

04 Controls are simple but effective, with two potentiometers and a digital display.

05 The panel casing is made from aluminium and has an adjustable U-mount bracket.

VERDICT

FEATURES ★★★½☆

BUILD & HANDLING ★★★½☆

IMAGE QUALITY ★★★★☆

VALUE ★★★★★

OVERALL ★★★★½

SUPPORTING ROLES

You'll need to buy stands for location flash kits and LED panels

Location flash heads and LED panels generally have the same attachment sockets as studio flash heads, so they mount on traditional lighting stands. These range from cheap single and two-pack stands to high-quality items from the likes of Elinchrom. For example, the Elinchrom ClipLock Stand is adjustable between 85cm and 235cm, and weighs 1.45kg.

Again, these are available individually or as a set of two, the latter including a padded soft case and costing around £112/$175. Given that the LED panels on test are ideal as lighting solutions for Zoom and other video meeting apps, a shorter, smaller-footprint tabletop stand can be a neat option. Some have a U-bracket clamp that can fasten to a table, whereas others are freestanding.

Neewer's mini tabletop stands are good for video shoots and close-up photography, and include a tripod-type screw in the spigot

ROTOLIGHT AEOS £750/$995

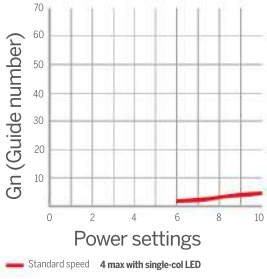
This versatile, up-market LED panel has pro-spec build quality but is a fairly bare-bones affair

Costing up to ten times the price of the other LED panels on test, the Rotolight AEOS packs some punch and versatility into its frame. However, the kit only includes the circular LED panel itself, a mains power supply, a heavy-duty ball head and a filter pack. A carrying case, softbox, barn doors and a yoke for mounting the panel on a lighting stand are all sold separately, as optional extras with similarly up-market price tags. For example, the soft case costs around £150/$165, and an optional V-mount li-ion battery for around four hours of mains-free operation costs £290/$300, without charger.

The LEDs have a 100,000 hour lifespan and enable completely flicker-free output, this time with a colour range of 3150-6300 Kelvin. Although suitable for stills, the AEOS comes into its own for video. Extra modes include customizable fade up/down and a range of special effects including flickering fire, lightning, TV, strobe and blue flashing emergency vehicle lights.

Performance

Max output is greater than from the GVM 800D LED panel, but a little less than from the Neewer 660S. The aperture in our one-metre test equated to f/4.5. As with the others, light intensity drops off when only using one colour of LED, this time equating to f/4. Twice the output is available in flash mode with zero recycle time, which comes with high speed sync if you buy a Phottix Odin II TTL trigger separately.



FEATURES

01 There's an array of bi-colour daylight and tungsten LEDs with a CRI >96 rating.

02 A heavy-duty ball head is supplied.

03 Rotolight's optional V-mount Li-ion battery costs an extra £290/$300.

04 Aluminium handles on the rear enable a natural grip for holding the panel.

05 The control interface is based on two pushbutton/rotary dials and a basic 7-segment display.

VERDICT

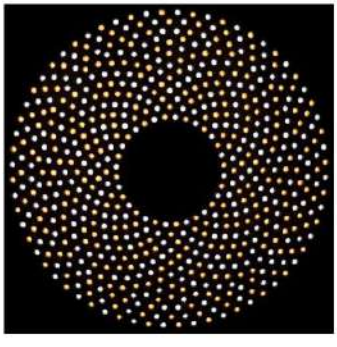
FEATURES
BUILD & HANDLING
PERFORMANCE
VALUE
OVERALL

BI-COLOUR PANELS

Change the colour of your lighting to suit the ambience

Given that LED lamps are nowhere near as powerful as flash heads, there's a greater need to match the ambient lighting in which you're shooting. Historically, this would mean using different lamps for shooting outdoors under daylight, and different for shooting indoors with artificial tungsten light. Alternatively, you could use gel filters to warm or cool the colour temperature of the lamp.

The LED panels we test all have a matrix of LEDs that include daylight and tungsten colour temperature lamps. By shifting the balance between the two sets of LEDs, you can match the output to daylight or tungsten lighting, or any mix of the two.



COMPARISON TABLE

	STUDIO FLASH		LOCATION FLASH			LED PANELS		
	ELINCHROM D-LITE RX 4/4 TO GO	INTERFIT HONEY BADGER 320Ws 2-LIGHT KIT	ELINCHROM ELB 500 TTL TO GO SET	INTERFIT HONEY BADGER UNLEASHED	PROFOTO B10 PLUS	GVM 800D RGB LED VIDEO LIGHT	NEEWER 660S	ROTOLIGHT AEOS
	www.elinchrom.com	www.interfit photographic.com	www.elinchrom.com	www.interfit photographic.com	www.profoto.com	https://gvmled.com	www.neewer.com	www.rotolight.com
Head power	400Ws	320Ws	500Ws	250Ws	500Ws	3500 lux, 1m	7300 lux, 1m	5750 lux, 3ft
Power range	5 stops	7 stops	7 stops	9 stops	10 stops	5 stops	3 stops	4.3 stops
Power adjustment	1/10th f/stops (custom)	1/10th f/stops	1/10th f/stops	1/10th f/stops	1/10th f/stops	Stepless	Stepless	Stepless
Flash duration	1/800 sec (max power)	1/900 sec (max power)	1/1200 to 1/3000 sec	Unspecified	1/390 to 1/35,000	N/A	N/A	N/A
Max recycle time (normal mode)	1.3 seconds	1.3 seconds	2.0 seconds	1.4 seconds	2.5 seconds	N/A	N/A	N/A
Power supply	Mains only	Mains only	Mains/battery	Battery only	Mains/battery	Mains (optional battery)	Mains (optional battery)	Mains (optional battery)
Cooling fan	Auto-sensing	Always on	No fan	No fan	Auto-sensing	No fan	No fan	No fan
Modelling lamp	100W	60W (equivalent) LED	LED, 2500 lumen	LED, 1250 lumen	LED, 2500 lumen	N/A	N/A	N/A
Modelling lamp settings	Prop, full, low, off	Prop, full, manual, off	Prop, manual, timer, off	Prop, full, off	Prop, full, manual, off	N/A	N/A	N/A
Sync socket	3.5mm jack	3.5mm jack	3.5mm jack	3.5mm jack	None	N/A	N/A	N/A
Wireless RF trigger	Yes	Yes	Phottix Odin II TTL, £125/$125	Interfit HSS TTL, £80/$100	Profoto Air Remote TTL, £349/$429	Bluetooth remote app	N/A	Phottix Odin II TTL, £125/$125
Stands	2x 2.35m	2x 2.3m	Not supplied	Not supplied	Not supplied	Not supplied	Not supplied	Not supplied
Head dimensions	14x26x19cm	13x13x15cm	14x9x16cm	15x18x15cm	11x24x10cm	26x4.8x26.8cm	23x4.8x20cm	30x2x30cm
Weight per head	1500g	1400g	680g	2300g	1900g	1,140g	1,480g	1400g
Carry bags	2 bags	1 bag	1 bag	1 bag	1 bag	1 bag	1 bag	1 bag
Battery life (full power output)	N/A	N/A	400 flashes	430 flashes	200 flashes	N/A	N/A	N/A
Target price	£769/$800	£549/$770	£1599/$1900	£800/$600	£1895/$2195	£110/$99	£74/$76	£750/$995
FEATURES	★★★★★	★★★★½	★★★★★	★★★★½	★★★★★	★★★★½	★★★½	★★★★½
BUILD & HANDLING	★★★★★	★★★★	★★★★★	★★★★	★★★★★	★★★★	★★★½	★★★★★
IMAGE QUALITY	★★★★★	★★★★½	★★★★★	★★★★	★★★★★	★★★½	★★★★	★★★★½
VALUE	★★★★★	★★★★	★★★★	★★★★★	★★★½	★★★★★	★★★★★	★★★½
OVERALL	★★★★★	★★★★½	★★★★★	★★★★½	★★★★½	★★★★	★★★★	★★★★½

THE WINNER IS... ELINCHROM D-LITE RX 4/4 TO GO

If you have access to mains power, this is the best kit for stills

For power, easy control, superb quality and versatility, the Elinchrom D-Lite RX 4/4 To Go Set twin-head kit wins. The only limiting factor is that it relies on mains power, so you can't use it where there's no access to an electrical mains outlet, unless you invest in a power inverter.

For battery-powered flash, Elinchrom wins again with its ELB 500 TTL To Go Set. The Profoto B10 Plus is eminently portable and works brilliantly, but it's pricey, especially once you add in Profoto's optional RF trigger and accessories. As a budget buy, the twin-head Interfit Honey Badger Unleashed kit delivers great performance at an affordable price.

For lower-power, the Neewer 660S and GVM 800D LED panels are outstanding value. The Neewer is powerful, whereas the GVM has a much lower max output but adds a range of RGB coloured lighting and tricked-up special effects.

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PhotoPlus

BUYERS' GUIDE

With prices ranging from a couple of hundred to a few thousand, Canon has an EOS camera to suit everyone, from the complete beginner to most demanding pro…

What to look for

Canon EOS cameras

Canon splits its EOS DSLR lineup into entry-level, enthusiast and pro ranges; the 4000D is the most basic, the 850D and 77D for intermediates, the 80D and full-frame 6D Mk II for more advanced enthusiasts, while the 7D, full-frame 5D and 1D lines have pro-level features. With more expensive models, expect greater handling, more robust build quality (weather-sealing and magnesium-alloy shells), more advanced features, and full-frame rather than APS-C image sensors. Over the page, we also have the full-frame EOS R mirrorless cameras, the EOS RP as an 'entry-level' and more affordable option, the EOS R and R5 for serious photographers. Plus not forgetting Canon's smaller compact system (also mirrorless) APS-C EOS M camera range.

DSLR CAMERAS

PRICES QUOTED ARE BODY-ONLY UNLESS STATED

ENTRY-LEVEL

CANON EOS 4000D

TESTED IN ISSUE **140** PRICE: **£300/$N/A**

CANON has stripped everything down to its bare essentials for the 4000D, and it's a great if basic DSLR for beginners, and at only £300 (body), it's the cheapest EOS DSLR. Sadly, it's let down by a cheap kit lens, that's tough to tolerate, so we suggest buying the better IS lens. ★★★☆☆

Sensor	18Mp APS-C CMOS
Viewfinder	Pentamirror, 0.8x, 95%
ISO	100-6400 (12,800 exp)
AF	9-point (1 cross-type)
LCD	2.7-in, 230k-dot
Max burst (buffer)	3fps
Memory card	SD/SDHC/SDXC

CANON EOS 2000D (REBEL T7)

TESTED IN ISSUE **149** PRICE with 18-55mm kit lens: **£329/$400**

THE 2000D is a better-spec Canon camera than the 4000D, but comes with a step up at its RRP current price. It's arguably worth the extra, but that puts it in a difficult spot, where another step up in outlay will get you an EOS 200D, which is a far better overall DSLR camera. ★★★½☆

Sensor	24.1Mp APS-C CMOS
Viewfinder	Pentamirror, 0.8x, 95%
ISO	100-6400 (12,800 exp)
AF	9-point (1 cross-type)
LCD	3-in, 920k-dots
Max burst (buffer)	3fps
Memory card	SD/SDHC/SDXC

CANON EOS 250D (REBEL SL3)

TESTED IN ISSUE **168** PRICE: **£529/$600**

THE EOS 250D/Rebel SL3 is not Canon's cheapest entry-level DSLR, but we think it's the best budget/beginner DSLR with the perfect blend of power and value. This is the body that will take people from snapping on their smartphones, to getting into the hobby. ★★★★☆

Sensor	24.1Mp APS-C CMOS
Viewfinder	Pentamirror, 0.87x, 95%
ISO	100-25,600 (51,200 exp)
AF	9-point (1 cross-type)
LCD	3-in vari-angle touch screen, 1040k
Max burst (buffer)	5fps
Memory card	SD/SDHC/SDXC

CANON EOS 850D (REBEL T8i)

TESTED IN ISSUE **172** PRICE: **£839/$749**

FOR ENTHUSIASTS looking to take the next step, the Canon EOS 850D is an impressive, lightweight yet powerful DSLR that captures detailed, colourful and sharper images, as well as 4K movies. Featuring iTR Face and Eye Detection AF and accurate Auto AF via optical viewfinder, the 850D is sure to satisfy. ★★★★☆

Sensor	24.1Mp Dual Pixel APS-C CMOS
Viewfinder	Pentamirror, 95% coverage, 0.82x
ISO	100-25,600
AF	45 cross-type AF point system
LCD	3-in vari-angle touch-screen, 1040k
Max burst (buffer)	7fps
Memory card	SD/SDHC/SDXC

CANON EOS 77D

TESTED IN ISSUE **156** PRICE with 18-135mm kit lens: **£1030/$1400**

THE key specs are identical to the 800D, but the extra top-plate LCD gives at-a-glance access to vital shooting info, while a rear control wheel makes dialing in exposure settings much quicker, promoting it to Canon's 'enthusiast' range. Super image quality – even at high ISOs. ★★★★½

Sensor	24.2Mp, APS-C (6000x4000 pixels)
Viewfinder	Pentamirror, 0.82x, 95%
ISO	100-25,600 (51,200 exp)
AF	45-point (all cross-type)
LCD	3-in vari-angle touch-screen, 1040k
Max burst (buffer)	6fps (27 Raw/Unlimited JPEG)
Memory card	SD/SDHC/SDXC

CANON EOS 90D

TESTED IN ISSUE **168** PRICE: **£1199/$1199**

THE Canon 90D is a heavyweight replacement for the 80D, and this decathlete crop-camera comes with a better 32.5Mp sensor, super-quick 10fps continous shooting and 4K video, plus improved handling. This camera is an ideal APS-C camera upgrade for enthusiasts and beyond. ★★★★½

Sensor	32.5Mp, APS-C (6960x4640 pixels)
Viewfinder	Pentaprism, 0.95x, 100%
ISO	100-25,600 (51,200 exp)
AF	45-point (all cross-type)
LCD	3-in vari-angle touch-screen, 1040k
Max burst (buffer)	10fps (25 Raw/58 JPEG)
Memory card	SD/SDHC/SDXC

CANON EOS 7D Mk II

TESTED IN ISSUE **159** PRICE: **£1429/$1400**

HERE'S the king of action-packed APS-C format EOS cameras. A little long in the tooth now, but it still has 65-point AF with advanced tracking, 10fps continuous drive, dual DIGIC 6 processors and GPS, all wrapped up in a tough, weather-sealed magnesium alloy shell. ★★★★★

Sensor	20.2Mp, APS-C (5472x3648 pixels)
Viewfinder	Pentaprism, 1.0x, 100%
ISO	100-16,000 (51,200 exp)
AF	65-point (all cross-type)
LCD	3-in, 1040k dots
Max burst (buffer)	10fps (31 Raw/Unlimited JPEG)
Memory card	CompactFlash + SD/SDHC/SDXC

CANON EOS 6D Mk II

TESTED IN ISSUE **168** PRICE: **£1349/$1600**

THE world's smallest full-frame DSLR – with a vari-angle touchscreen LCD – gets a major upgrade over the original 6D with improved speed and performance rather than outright image quality. It's a great all-rounder now thanks to an improved AF system and burst rate. ★★★★½

Sensor	26.2Mp, full-frame (6240x4160 pixels)
Viewfinder	Optical pentaprism, 98%
ISO	100-40,000 (50-102,400 exp)
AF	45-point (all cross-type)
LCD	3-in vari-angle touch-screen, 1040k
Max burst (buffer)	6.5fps (21 Raw/150 JPEG)
Memory card	SD/SDHC/SDXC

CANON EOS 5D Mk IV

TESTED IN ISSUE **168** PRICE: **£2789/$2499**

A SUPERB all-rounder, the pro-level weather-sealed full-frame 5D Mk IV combines a stunning hi-res 30Mp sensor with a swift 7fps frame rate. Its impressive specs list includes 4K video, a touchscreen LCD, Wi-Fi and NFC connectivity, and GPS to automatically geotag images. ★★★★★

Sensor	30.4Mp, full-frame (6720x4480 pixels)
Viewfinder	Pentaprism, 0.71x, 100%
ISO	100-32,000 (50-102,400 exp)
AF	61-point (41 cross-type, 5 dual-cross)
LCD	3.2-in touch-screen, 1620k dots
Max burst (buffer)	7fps (21 Raw/Unlimited JPEG)
Memory card	CompactFlash + SD/SDHC/SDXC

CANON EOS 5DS (5DS R)

TESTED IN ISSUE **148** PRICES: **£2349/$3700**

THE world's first 50Mp full-frame DSLR delivers huge *and* amazingly detailed hi-res images. The higher-cost 5DS R adds a 'low-pass cancellation filter' for marginally sharper shots. As expected with such a high-res sensor, max ISO and drive rate are lower than with the 5D Mk IV. ★★★★½

Sensor	50.6Mp, full-frame (8688x5792 pixels)
Viewfinder	Pentaprism, 0.71x, 100%
ISO	100-6400 (50-12,800 exp)
AF	61-point (41 cross-type, 5 dual-cross)
LCD	3.2-in, 1040k dots
Max burst (buffer)	5fps (14 Raw/510 JPEG)
Memory card	CompactFlash + SD/SDHC/SDXC

CANON EOS-1D X MARK III

TESTED IN ISSUE **164** PRICE: **£6500/$6500**

THE Canon EOS-1D X Mark III is the ultimate hybrid DSLR/mirrorless machine, with superb low-light performance up to ISO102,400, expandable to 819,200, Deep Learning AF and 5.5K Raw video. It can also capture up to 20fps in Live View mode making it a dream to shoot any action. ★★★★★

Sensor	20.1Mp full-frame (5472x3648 pixels)
Viewfinder	Pentaprism, 0.76x, 100% coverage
ISO	100-102,400 (exp 50-819,200)
AF	191-point (155 cross-type)
LCD	3.2-inch touchscreen, 2.1million dots
Max burst (buffer)	20fps (1000 Raw/Unlimited JPEG)
Memory card	2xCFexpress 1.0 Type B

PhotoPlus

BUYERS' GUIDE

With prices ranging from a couple of hundred to a few thousand, Canon has an EOS camera to suit everyone, from the complete beginner to most demanding pro…

What to look for

Canon EOS mirrorless cameras

When it comes to choosing mirrorless EOS cameras over DSLRs, there are pros and cons to consider. Canon's full-frame EOS R cameras are packed with the very latest tech including IBIS, Animal AF and 20fps via the electronic shutter in both the EOS R5 and R6. Without the mirror, R bodies are smaller than their DSLR equivalents (but only a fraction lighter). Compared to Optical Viewfinders on DSLRs, using an R's Electronic Viewfinder (EVF) is slower to focus due to lag and refresh rates, yet focusing via Live View with AF points all over the touchscreen is better. EOS R cameras can also use the next gen Canon RF lenses and their superior image quality (and superior size), but most R cameras and RF lenses are, currently, a lot more expensive.

MIRRORLESS CAMERAS

PRICES QUOTED ARE BODY-ONLY UNLESS STATED

CANON EOS M200

TESTED IN ISSUE **160** PRICE with 15-45mm kit lens: **£550/$550**

CANON'S EOS M200 is aimed at attracting Instagramers and smartphone upgraders to Canon's mirrorless M range, and has an appealing spec list including its 24Mp sensor and plenty of easy-to-use features for beginners. It shoots 4K video to slea the deal. ★★★½☆

Sensor	24.1Mp APS-C CMOS
Viewfinder	No
ISO	100-25,600 (51,200 exp)
AF	143-point AF
LCD	3-in tilting touchscreen, 1040k dots
Max burst (buffer)	6.1 fps
Memory card	SD/SDHC/SDXC and UHS-1

CANON EOS M50 MARK II

TESTED IN ISSUE **179** PRICE: **£589/$599**

IF YOU'RE coming to the EOS M system afresh, the EOS M50 Mark II is a compact and capable camera, taking great stills and 1080p video, ideal for travel, everyday imaging and vlogging and content creation. But if you need to record 4K then this isn't the camera for you. ★★★★☆

Sensor	24.1Mp CMOS APS-C
Viewfinder	OLED EVF, 2.36 million dots
ISO	100-25,600 (exp. to 51,200)
AF	Dual Pixel CMOS AF, 3975 focus positions
LCD	3-in articulating touchscreen, 1040k dots
Max burst (buffer)	10fps
Memory card	1x SD UHS-I

CANON EOS M6 MARK II

TESTED IN ISSUE **164** PRICE: **£870/$850**

THE M6 Mk II is Canon's compact, yet powerful APS-C mirrorless designed to deliver sharp images for amateurs on the move. It has the same 32.5Mp APS-C sensor as the Canon 90D DSLR, but it's able to shoot in 14fps blasts, and 30fps Raw image bursts, plus 'uncropped' 4K video. ★★★★½

Sensor	32.5Mp APS-C CMOS
Viewfinder	No
ISO	100-25,600
AF	143/99-point
LCD	3-in tilting touchscreen, 1040k dots
Max burst (buffer)	14fps (23 Raws, 54 JPEGs)
Memory card	SD/SDHC/SDXC and UHS-1

CANON EOS M5

TESTED IN ISSUE **168** PRICE with 15-45mm kit lens: **£600/$650**

AS Canon's flagship mirrorless M camera for enthusiasts, the EOS M5 really opens up the DSLR vs CSC debate. It shares much of the tech as the 80D, but swaps the optical viewfinder for an electronic version, making this compact system camera a pocket rocket. ★★★½☆

Sensor	24.2Mp APS-C CMOS
Viewfinder	OLED EVF, 2.36 million dots
ISO	100-25,600
AF	49-point AF
LCD	3.2-in tilting touchscreen, 1620k dots
Max burst (buffer)	9fps
Memory card	SD/SDHC/SDXC and UHS-1

CANON EOS R3

TESTED IN ISSUE **184** PRICE: **£5879/$5999**

CANON'S NEW sporty pro mirrorless R3 has clever AF that's amazing at detecting vehicles as well as people and animals, Eye Control AF, faster 30fps, blackout-free EVF, and it can take 4K 60p video without overheating, which means the R3 succeeds where the R5 fell short. ★★★★★

Sensor	24.1Mp stacked CMOS
Viewfinder	0.5-inch EVF, 5.76 million dots
ISO	100-102,400 (50-204,800 exp)
AF	4779 Dual Pixel AF positions
LCD	3-in vari-angle touch-screen, 4.15m dots
Max burst (buffer)	12fps mechanical, 30fps electronic
Memory card	CFexpress type, SD/SDHC/SDXC

● **Eye Control AF helps you lock focus better**

● **Fully weather sealed and built for speed**

● **The 24.1Mp sensor is perfect for sports pros**

CANON EOS R5

TESTED IN ISSUE **169** PRICE : **£4199/$3899**

THE Canon EOS R5 is deserving of the hype: it's the perfect amalgamation of the R's full-frame form, the 5D's function, the pro-grade autofocus of the flagship 1D X Mark III DSLR, plus with near-medium format resolution, 20fps burst speeds and mirrorless magic like IBIS and amazingly-intelligent Animal AF. ★★★★☆

Sensor	45Mp full-frame CMOS
Viewfinder	OLED EVF, 5690k dots
ISO	100-51,200 (50-102,400 exp)
AF	5940 Dual Pixel CMOS AF II
LCD	3.15-in articulating touch-screen, 2100k dots
Max burst (buffer)	12fps mechanical, 20fps electronic
Memory card	CFexpress type B, UHS-II SD/SDHC/SDXC

CANON EOS R

TESTED IN ISSUE **168** PRICE: **£1880/$1799**

THE full-frame mirrorless Canon EOS R boasts the RF mount and fully articulated Dual Pixel AF touchscreen with 5655 AF points. Equivalent in many specs to the EOS 5D Mark IV, it's an attractive way for those looking to experience mirrorless photography. ★★★★☆

Sensor	30.3Mp full-frame CMOS
Electronic viewfinder	0.5-in EVF, 3.69million dots
ISO	100-40,000 (50-102,400 exp)
AF	5655 Dual Pixel AF points
LCD	3.2-in fully articulating touchscreen
Max burst (buffer)	Approx. 8fps (47 Raw, 100JPEG)
Memory card	1x SD/SDHC/SDXC and UHS-II

CANON EOS R6

TESTED IN ISSUE **170** PRICE: **£2499/$2499**

THE R6 is built for speed, ideal for enthusiast and semi-pro sports and wildlife photographers, it can shoot up to 20fps with amazing Deep Learning AF and insanely handy IBIS. Plus with magnificent build, all weather sealed, and a fast and bright EVF, the R6 is an impressive upgrade. ★★★★☆

Sensor	20.1Mp, full-frame CMOS
Viewfinder	0.5-in EVF, 3690 million dots
ISO	100-102,400 (50-204,800 exp)
AF	6072 Dual Pixel CMOS AF II
LCD	3-in vari-angle touch-screen, 1040k
Max burst (buffer)	12fps mechanical, 20fps electronic
Memory card	2x UHS-II SD/SDHC/SDXC

CANON EOS RP

TESTED IN ISSUE **168** PRICE: **£1299/$1400**

CANON is catering to crop-sensor CSC M or EOS DSLR users looking for a full-frame upgrade that won't break the bank. The EOS RP is strong spec package that's notably smaller, lighter and cheaper than almost all its rivals, and ideal as an 'entry-level' full-frame camera. ★★★½☆

Sensor	26.2Mp, full-frame CMOS
Viewfinder	0.39-in EVF, 2.36 million dots
ISO	100-40,000 (50-102,400 exp)
AF	4779 Dual Pixel AF positions
LCD	3-in vari-angle touch-screen, 1040k
Max burst (buffer)	5fps (50 Raw/Unlimited JPEG)
Memory card	SD/SDHC/SDXC and UHS-II

PhotoPlus

BUYERS' GUIDE

With more than 190 lenses for Canon EOS cameras, picking the best for the job can be a minefield. Here's the lowdown!

Choosing lenses

Key factors to watch out for

THE MAIN factors to consider in a lens are its focal length, maximum aperture, and whether or not it's full-frame compatible. We've categorized lenses by focal length range – from wide-angle to telephoto. The larger a lens's maximum aperture, the 'faster' it's considered to be. Zooms are more flexible than primes, but tend not to have such fast maximum apertures. Full-frame lenses will also work with 'crop-sensor' EOS DSLRs, but crop-sensor lenses aren't compatible with full-frame cameras. For Canon EOS R System mirrorless cameras you need dedicated Canon RF lenses.

KEY: ● BEST VALUE AWARD ● BEST ON TEST AWARD

WIDE-ANGLE ZOOMS

WIDE-ANGLE ZOOMS	Price	Full-frame	Max zoom	Image stabilization	Max aperture	Weight	Min focus distance	Max magnification	Filter size	Iris blades	Issue reviewed	Rating	Awards
Canon EF 8-15mm f/4L Fisheye USM	£1120/$1250	Yes	1.9x	No	f/4	540g	0.15m	0.34x	None	7	90	★★★★	
Canon EF-S 10-18mm f/4.5-5.6 IS STM	£195/$299	No	1.8x	Yes	f/4.5-5.6	240g	0.22m	0.15x	67mm	7	176	★★★★	●
Canon EF-S 10-22mm f/3.5-4.5 USM	£500/$650	No	2.2x	No	f/3.5-4.5	385g	0.24m	0.17x	77mm	6	131	★★★½	
Canon EF 11-24mm f/4L USM	£2700/$2800	Yes	2.2x	No	f/4	1180g	0.28m	0.16x	None	9	131	★★★★½	
Canon RF 15-35mm F2.8L IS USM	£2330/2300	Yes	2.3x	Yes	f/2.8	840	0.28m	0.21x	82mm	9	159	★★★★	
Canon EF 16-35mm f/2.8L III USM	£2159/$2199	Yes	2.2x	No	f/2.8	790g	0.28m	0.22x	82mm	9	176	★★★★½	
Canon EF 16-35mm f/4L IS USM	£999/$1099	Yes	2.2x	Yes	f/4	615g	0.28m	0.23x	77mm	9	176	★★★★★	●
Canon EF 17-40mm f/4L USM	£720/$750	Yes	2.4x	No	f/4	500g	0.28m	0.24x	77mm	7	113	★★★★½	
Sigma 8-16mm f/4.5-5.6 DC HSM	£600/$800	No	2.0x	No	f/4.5-5.6	555g	0.24m	0.13x	None	7	143	★★★★	
Sigma 10-20mm f/3.5 EX DC HSM	£319/$399	No	2.0x	No	f/3.5	520g	0.24m	0.15x	82mm	7	176	★★★★	
Sigma 12-24mm f/4 DG HSM A	£1269/$1599	Yes	2.0x	No	f/4	1150g	0.24m	0.2x	None	9	176	★★★★½	
Sigma 14-24mm f/2.8 DG HSM A	£1129/$1199	Yes	0.19x	No	f/2.8	1150g	0.26m	0.19x	None	9	176	★★★★★	●
Sigma 24-35mm f/2 DG HSM A	£760/$900	Yes	1.5x	No	f/2	940g	0.28m	0.23x	77mm	7	113	★★★½	
Tamron 10-24mm f/3.5-4.5 Di II VC HLD	£449/$499	No	0.19x	Yes	f/3.5-4.5	440g	0.24m	0.19x	77mm	7	176	★★★★★	●
Tamron SP 15-30mm f/2.8 Di VC USD	£930/$1100	Yes	2.0x	Yes	f/2.8	1100g	0.28m	0.2x	None	9	143	★★★★½	
Tamron SP 15-30mm f/2.8 Di VC USD G2	£1099/$1299	Yes	2.0x	Yes	f/2.8	1110g	0.28m	0.2x	None	9	176	★★★★½	
Tokina 11-16mm f/2.8 AT-X PRO DX II	£480/$500	No	1.8x	No	f/2.8	560g	0.28m	0.12x	77mm	9	87	★★★	
Tokina 11-20mm f/2.8 AT-X PRO DX	£499/$449	No	1.43x	No	f/2.8	560g	0.28m	0.12x	82mm	9	167	★★★★½	
Tokina 12-28mm f/4 AT-X Pro DX	£450/$400	No	2.3x	No	f/4	530g	0.25m	0.2x	82mm	9	116	★★★★	
Tokina 16-28mm f/2.8 FF	£699/$699	Yes	1.8x	No	f/2.8	940g	0.28m	0.19x	82mm	9	154	★★★★	
Tokina 17-35mm f/4 AT-X PRO FX	£570/$450	Yes	2.1x	No	f/4	600g	0.28m	0.21x	82mm	9			

TELEPHOTO ZOOMS

TELEPHOTO ZOOMS													
Canon EF-M 55-200mm f/4.5-6.3 IS STM	£249/$349	No	3.6x	Yes	f/4.5-6.3	260g	1.0m	0.21x	52mm	7	163	★★★★	
Canon EF-S 55-250mm f/4-5.6 IS STM	£299/$299	No	4.5x	Yes	f/4-5.6	375g	0.85m	0.29x	58mm	7	163	★★★½	
Canon EF 70-200mm f/2.8L IS III USM	£2149/$2099	Yes	2.9x	Yes	f/2.8	1480g	1.2m	0.21x	77mm	8	175	★★★★½	
Canon EF 70-200mm f/2.8L USM	£1330/$1250	Yes	2.9x	No	f/2.8	1310g	1.5m	0.16x	77mm	8	64	★★★★	
Canon EF 70-200mm f/4L IS II USM	£1309/$1299	Yes	2.9x	Yes	f/4	780g	1.0m	0.27x	72mm	9	175	★★★★	
Canon EF 70-200mm f/4L IS USM	£899/$1099	Yes	2.9x	Yes	f/4	760g	1.2m	0.21x	72mm	8	151	★★★★	
Canon EF 70-200mm f/4L USM	£589/$599	Yes	2.9x	No	f/4	705g	1.2m	0.21x	67mm	8	163	★★★★	
Canon RF 70-200mm F2.8L IS USM	£2659/$2699	Yes	2.9x	Yes	f/2.8	1070g	0.7m	0.23x	77mm	9	175	★★★★½	
Canon EF 70-300mm f/4-5.6 IS USM	£400/$650	Yes	4.3x	Yes	f/4-5.6	630g	1.5m	0.26x	58mm	8	123	★★★	
Canon EF 70-300mm f/4-5.6 IS II USM	£449/$499	Yes	4.3x	Yes	f/4-5.6	710g	1.2m	0.25x	67mm	9	163	★★★★½	●
Canon EF 70-300mm f/4-5.6L IS USM	£1199/$1349	Yes	4.3x	Yes	f/4-5.6	1050g	1.2m	0.21x	67mm	8	163	★★★★	
Canon EF 70-300mm f/4.5-5.6 DO IS USM	£1380/$1400	Yes	4.3x	Yes	f/4.5-5.6	720g	1.4m	0.19x	58mm	6	90	★★★	
Canon EF 75-300mm f/4-5.6 III	£210/$200	Yes	4.0x	No	f/4-5.6	480g	1.5m	0.25x	58mm	7	15	★★★	
Canon EF 75-300mm f/4-5.6 III USM	£260/$190	Yes	4.0x	No	f/4-5.6	480g	1.5m	0.25x	58mm	7	70	★★★	
Canon EF 100-400mm f/4.5-5.6L IS II USM	£2279/$2399	Yes	4.0x	Yes	f/4.5-5.6	1640g	0.98m	0.31x	77mm	9	182	★★★★	
Canon RF 100-500mm F4.5-7.1L IS USM	£2979/$2699	Yes	5x	Yes	f/4.5-71	1530g	0.9-1.2m	0.33x	77mm	9	182	★★★★½	
Canon EF 200-400mm f/4L IS USM Extender 1.4x	£11,209/$10,999	Yes	2.8x	Yes	f/4	3620g	2.0m	0.15x	52mm	9	182	★★★★½	
Sigma 50-100mm f/1.8 DC HSM A	£949/$1099	No	2.0x	None	f/1.8	1490g	0.95m	0.15x	82mm	9	175	★★★★	
Sigma 50-500mm f/4.5-6.3 DG OS HSM	£1160/$1660	Yes	10.0x	Yes	f/4.5-6.3	1970g	0.5-1.8m	0.32x	95mm	9	130	★★★½	
Sigma 60-600mm f/4.5-6.3 DG OS HSM Sport	£1699/$1999	Yes	10.0x	Yes	f/4.5-6.3	2700g	0.6-2.6m	0.3x	105mm	9	182	★★★★	
Sigma 70-200mm f/2.8 EX DG OS HSM	£900/$1300	Yes	2.9x	Yes	f/2.8	1430g	1.4m	0.13x	77mm	9	137	★★★★½	●
Sigma 70-200mm f/2.8 DG OS HSM S	£1179/$1379	Yes	2.9x	Yes	f/2.8	1805g	1.2m	0.21x	82mm	11	175	★★★★★	● ●
Sigma 70-300mm f/4-5.6 DG Macro	£130/$140	Yes	4.3x	No	f/4-5.6	545g	0.95m	0.5x	58mm	9	123	★★★	
Sigma APO 70-300mm f/4-5.6 DG Macro	£180/$180	Yes	4.3x	No	f/4-5.6	550g	0.95m	0.5x	58mm	9	137	★★★	
Sigma 100-400mm f/5-6.3 DG OS HSM C	£679/$609	Yes	4x	Yes	f/5-6.3	1160g	1.6m	0.26x	67mm	9	163	★★★★½	
Sigma 120-300mm f/2.8 DG OS HSM S	£2699/$3599	Yes	2.5x	Yes	f/2.8	3390g	1.5-2.5m	0.12x	105mm	9	175	★★★★½	
Sigma 150-600mm f/5-6.3 DG OS HSM C	£849/$899	Yes	4.0x	Yes	f/5-6.3	1930g	2.8m	0.2x	95mm	9	182	★★★★½	●
Sigma 150-600mm f/5-6.3 DG OS HSM S	£1329/$1849	Yes	4.0x	Yes	f/5-6.3	2860g	2.6m	0.2x	105mm	9	182	★★★★★	●
Tamron SP AF 70-200mm f/2.8 Di LD (IF) Macro	£630/$770	Yes	2.9x	No	f/2.8	1320g	0.95m	0.32x	77mm	9	137	★★★★	
Tamron SP 70-200mm f/2.8 Di VC USD G2	£1249/$1299	Yes	2.9x	Yes	f/2.8	1500g	0.95m	0.16x	77mm	9	175	★★★★★	●
Tamron 70-210mm f/4 DI VC USD	£549/$599	Yes	2.9x	Yes	f/4	860g	0.95m	0.32x	67mm	9	175	★★★★	
Tamron AF 70-300mm f/4-5.6 Di LD Macro	£130/$145	Yes	4.3x	No	f/4-5.6	458g	0.95m	0.5x	62mm	9	137	★★★	
Tamron SP AF 70-300mm f/4-5.6 Di VC USD	£329/$449	Yes	4.3x	Yes	f/4-5.6	765g	1.5m	0.25x	62mm	9	163	★★★★½	●
Tamron 100-400mm f/4.5-6.3 Di VC USD	£699/$799	Yes	4x	Yes	f/4-5.6	1135g	1.5m	0.28x	67mm	9	163	★★★★½	
Tamron SP 150-600mm f/5-6.3 Di VC USD	£830/$870	Yes	4.0x	Yes	f/5-6.3	1951g	2.7m	0.2x	95mm	9	130	★★★½	
Tamron SP 150-600mm f/5-6.3 Di VC USD G2	£1099/$1199	Yes	4.0x	Yes	f/5-6.3	2010g	2.2m	0.26x	95mm	9	182	★★★★½	

KEY: ● BEST VALUE AWARD ● BEST ON TEST AWARD

STANDARD ZOOMS

	Price	Full-frame	Max zoom	Image stabilization	Max aperture	Weight	Min focus distance	Max magnification	Filter size	Iris blades	Issue reviewed	Rating	Awards
Canon EF-S 15-85mm f/3.5-5.6 IS USM	£690/$799	No	5.7x	Yes	f/3.5-5.6	575g	0.35m	0.21x	72mm	7	142	★★★★	
Canon EF-S 17-55mm f/2.8 IS USM	£790/$549	No	3.2x	Yes	f/2.8	645g	0.35m	0.17x	77mm	7	142	★★★★½	●
Canon EF-S 18-55mm f/3.5-5.6 IS II	£170/$200	No	3.1x	Yes	f/3.5-5.6	200g	0.25m	0.34x	58mm	6	110	★★★	
Canon EF-S 18-55mm f/3.5-5.6 IS STM	£214/$106	No	3.1x	Yes	f/3.5-5.6	205g	0.25m	0.36x	58mm	7	162	★★★★	
Canon EF 24-70mm f/2.8L II USM	£1740/$1599	Yes	2.9x	No	f/2.8	805g	0.38m	0.21x	82mm	9	162	★★★★½	
Canon RF 24-70mm F2.8L IS USM	£2329/2299	Yes	2.9x	Yes	f/2.8	900g	0.21x	0.30x	82mm	9	162	★★★★★	●
Canon EF 24-70mm f/4L IS USM	£800/$849	Yes	2.9x	Yes	f/4	600g	0.38m	0.7x	77mm	9	162	★★★★	
Canon RF 28-70mm F2L USM	£2500/$3200	Yes	2.9x	No	f/2	1430g	0.39m	0.18x	95mm	9			
Canon EF 24-105mm f/3.5-5.6 IS STM	£579/$599	Yes	4.4x	Yes	f/3.5-5.6	525g	0.4m	0.3x	77mm	7	162	★★★★	
Canon EF 24-105mm f/4L IS II USM	£998/$1099	Yes	4.4x	Yes	f/4	795g	0.45m	0.24x	77mm	10	127	★★★★	
Canon RF 24-105mm F4-7.1 IS STM	£479/$399	Yes	0.5x	Yes	f/4-7.1	385g	0.13m	0.34x	67mm	7	180	★★★★½	
Canon RF 24-105mm F4L IS USM	£1119/$1099	Yes	4.4x	No	f/1.2	700g	0.40m	0.19x	77mm	9	162	★★★★½	
Sigma 17-50mm f/2.8 EX DC OS HSM	£330/$370	No	2.9x	Yes	f/2.8	565g	0.28m	0.2x	77mm	7	127	★★★½	
Sigma 17-70mm f/2.8-4 DC Macro OS HSM C	£350/$399	No	4.1x	Yes	f/2.8-4	465g	0.22m	0.36x	72mm	7	180	★★★★	
Sigma 18-35mm f/1.8 DC HSM A	£650/$800	No	1.9x	No	f/1.8	810g	0.28m	0.23x	72mm	9	90	★★★★★	
Sigma 24-70mm f/2.8 DG OS HSM A	£1200/$1200	Yes	2.9x	Yes	f/2.8	1,020g	0.38m	0.2x	82mm	9	142	★★★★★	● ●
Sigma 24-105mm f/4 DG OS HSM A	£600/$900	Yes	4.4x	Yes	f/4	885g	0.45m	0.22x	82mm	9	127	★★★★	
Tamron SP AF 17-50mm f/2.8 XR Di II VC	£420/$650	No	2.9x	Yes	f/2.8	570g	0.29m	0.21x	72mm	7	142	★★★½	
Tamron SP AF 24-70mm f/2.8 Di VC USD G2	£1250/$1200	Yes	2.9x	Yes	f/2.8	905g	0.38m	0.2x	82mm	9	142	★★★★½	
Tamron SP AF 28-75mm f/2.8 XR Di	£450/$500	Yes	2.7x	No	f/2.8	510g	0.33m	0.26x	67mm	7	57	★★★	

SUPERZOOMS

Canon EF-S 18-135mm f/3.5-5.6 IS STM	£290/$399	No	7.5x	Yes	f/3.5-5.6	480g	0.39m	0.28x	67mm	7	172	★★★★	
Canon EF-S 18-135mm f/3.5-5.6 IS USM	£489/$599	No	7.5x	Yes	f/3.5-5.6	515g	0.39m	0.28x	67mm	7	172	★★★★½	
Canon EF-S 18-200mm f/3.5-5.6 IS	£470/$700	No	11.1x	Yes	f/3.5-5.6	595g	0.45m	0.24x	72mm	6	128	★★★½	
Canon RF 24-240mm F4-6.3 IS USM	£859/$699	Yes	10x	Yes	f/4-6.3	750g	0.5m	0.26x	72mm	7	172	★★★★★	●
Canon EF 28-300mm f/3.5-5.6L IS USM	£2289/$2450	Yes	10.7x	Yes	f/3.5-5.6	1760g	0.7m	0.30x	77mm	8	153	★★★★	
Sigma 18-200mm f/3.5-6.3 DC Macro OS HSM C	£269/$399	No	11.1x	Yes	f/3.5-6.3	430g	0.39m	0.33x	62mm	7	172	★★★★	
Sigma 18-250mm f/3.5-6.3 DC Macro OS HSM	£350/$350	No	13.9x	Yes	f/3.5-6.3	470g	0.35m	0.34x	62mm	7	92	★★★★★	●
Sigma 18-300mm f/3.5-6.3 DC Macro OS HSM C	£369/$499	No	16.7x	Yes	f/3.5-6.3	585g	0.39m	0.33x	72mm	7	172	★★★★½	
Tamron 16-300mm f/3.5-6.3 Di II VC PZD Macro	£499/$629	No	18.8x	Yes	f/3.5-6.3	540g	0.39m	0.34x	67mm	7	172	★★★★	
Tamron 18-200mm f/3.5-6.3 Di II VC	£189/$199	No	11.1x	Yes	f/3.5-6.3	400g	0.49m	0.25x	62mm	7	172	★★★★	●
Tamron AF 18-270mm f/3.5-6.3 Di II VC PZD	£300/$450	No	15x	Yes	f/3.5-6.3	450g	0.49m	0.26x	62mm	7	128	★★★½	
Tamron 18-400mm f/3.5-6.3 Di II VC HLD	£599/$599	No	22.2x	Yes	f/3.5-6.3	710g	0.45m	0.34x	72mm	7	172	★★★★	

WIDE-ANGLE PRIMES

Canon EF 14mm f/2.8L II USM	£2000/$2100	Yes	None	No	f/2.8	645g	0.2m	0.15x	None	6			
Canon TS-E 17mm f/4L (tilt & shift)	£2000/$2150	Yes	None	No	f/4	820g	0.25m	0.14x	77mm	8	90	★★★★★	
Canon EF 20mm f/2.8 USM	£450/$540	Yes	None	No	f/2.8	405g	0.25m	0.14x	72mm	5	114	★★★½	
Canon EF-M 22mm f/2 STM	£229/$249	No	None	No	f/2	105g	0.15m	0.21x	43mm	7	180	★★★★	
Canon EF 24mm f/1.4L II USM	£1500/$1550	Yes	None	No	f/1.4	650g	0.25m	0.17x	77mm	8			
Canon EF 24mm f/2.8 IS USM	£529/$599	Yes	None	Yes	f/2.8	280g	0.2m	0.23x	58mm	7	180	★★★★½	
Canon EF-S 24mm f/2.8 STM	£159/$149	No	None	No	f/2.8	125g	0.16m	0.27x	52mm	7	180	★★★★	●
Canon TS-E 24mm f/3.5L II (tilt & shift)	£1690/$1900	Yes	None	No	f/3.5	780g	0.21m	0.34x	82mm	8			
Canon EF 28mm f/1.8 USM	£420/$510	Yes	None	No	f/1.8	310g	0.25m	0.18x	58mm	7	67	★★★	
Canon EF 28mm f/2.8 IS USM	£390/$500	Yes	None	Yes	f/2.8	260g	0.23m	0.2x	58mm	7	114	★★★★	
Canon EF 35mm f/1.4L II USM	£1650/$1650	Yes	None	No	f/1.4	760g	0.28m	0.21x	72mm	9	141	★★★★½	
Canon RF 35mm F1.8 IS Macro STM	£529/$499	Yes	None	Yes	f/1.8	305g	0.17m	0.5x	52mm	9	180	★★★★★	●
Canon EF 35mm f/2 IS USM	£539/$599	Yes	None	Yes	f/2	335g	0.24m	0.24x	67mm	8	180	★★★★½	
Irix 11mm f/4 Blackstone	£609/$650	Yes	None	No	f/4	790g	0.28m	0.13	None	9			
Irix 15mm f/2.4 Blackstone	£574/$675	Yes	None	No	f/2.4	685g	0.25m	0.11x	95mm	9	167	★★★★½	
Peleng 8mm f/3.5 Fisheye	£250/$215	Yes	None	No	f/3.5	400g	0.22m	0.13x	None				
Peleng 17mm f/2.8 Fisheye	£290/$290	Yes	None	No	f/2.8	630g	0.3m	N/S	None				
Samyang 8mm f/3.5 IF MC CSII DH Circular	£240/$260	No	None	No	f/3.5	435g	0.3m	N/S	None	6			
Samyang 10mm f/2.8 ED AS NCS CS	£379/$399	No	None	No	f/2.8	590g	0.25m	N/S	None	6	167	★★★★	
Samyang 12mm f/2.8 ED AS NCS Diagonal	£360/$470	Yes	None	No	f/2.8	530g	0.2m	N/S	None	7			
Samyang XP 14mm f/2.4	£899/$999	Yes	None	No	f/2.4	791g	0.27m	0.08x	None	9	167	★★★★	
Samyang 16mm f/2 ED AS UMC CS	£330/$360	No	None	No	f/2	590g	0.2m	N/S	77mm	8			
Samyang 24mm f/1.4 ED AS UMC	£480/$470	Yes	None	No	f/1.4	680g	0.25m	N/S	77mm	8			
Samyang T-S 24mm f/3.5 ED AS UMC (tilt & shift)	£680/$760	Yes	None	No	f/3.5	680g	0.2m	N/S	82mm	8	90	★★★★	
Samyang 35mm f/1.4 AS UMC AE	£489/$499	Yes	None	No	f/1.4	660g	0.3m	N/S	77mm	8	180	★★★★	
Sigma 4.5mm f/2.8 EX DC HSM Circular Fisheye	£700/$900	No	None	No	f/2.8	470g	0.14m	0.17x	None	6	87	★★★★	
Sigma 8mm f/3.5 EX DG Circular Fisheye	£700/$900	Yes	None	No	f/3.5	400g	0.14m	0.22x	None	6	87	★★★★	●
Sigma 10mm f/2.8 EX DC HSM Diagonal Fisheye	£600/$600	No	None	No	f/2.8	475g	0.14m	0.11x	None	7	87	★★★★	
Sigma 14mm f/1.8 DG HSM | A	£1299/$1399	Yes	None	No	f/1.8	1170g	0.27m	0.19x	None	9	155	★★★★½	
Sigma 15mm f/2.8 EX DG Diagonal Fisheye	£600/$610	Yes	None	No	f/2.8	370g	0.15m	0.26x	None	7	44	★★★★	
Sigma 16mm f/1.4 DC DN | C	£449/$400	Yes	None	No	f/1.4	405g	0.25m	0.1x	67mm	9	161	★★★★½	
Sigma 20mm f/1.4 DG HSM A	£700/$900	Yes	None	No	f/1.4	950g	0.28m	0.14x	77mm	9	114	★★★★★	
Sigma 24mm f/1.4 DG HSM A	£650/$850	Yes	None	No	f/1.4	665g	0.25m	0.19x	77mm	9	114	★★★★★	●
Sigma 30mm f/1.4 DC DN | C	£329/$339	Yes	None	No	f/1.4	270g	0.3m	0.14x	52mm	9	161	★★★★½	
Sigma 35mm f/1.4 DG HSM A	£699/$699	Yes	None	No	f/1.4	665g	0.3m	0.19x	67mm	9	180	★★★★½	
Sigma 56mm f/1.4 DC DN | C	£349/$429	Yes	None	No	f/1.4	280g	0.5m	0.14x	55mm	9	166	★★★★½	●
Tamron SP 35mm f/1.8 Di VC USD	£649/$599	Yes	None	Yes	f/1.8	480g	0.2m	0.4x	67mm	9	180	★★★★½	
Zeiss Milvus 15mm f/2.8 ZE	£2330/$2700	Yes	None	No	f/2.8	947g	0.25m	0.11x	95mm	9			
Zeiss Distagon T* 18mm f/3.5 ZE	£1090/$1395	Yes	None	No	f/3.5	510g	0.3m	0.08x	82mm	9	44	★★★★★	●
Zeiss Milvus 21mm f/2.8 ZE	£1400/$1850	Yes	None	No	f/2.8	851g	0.22m	0.2x	82mm	9			
Zeiss Distagon T* 25mm f/2 ZE	£1270/$1700	Yes	None	No	f/2	600g	0.25m	0.17x	67mm	9			
Zeiss Distagon T* 28mm f/2 ZE	£980/$1285	Yes	None	No	f/2	580g	0.24m	0.21x	58mm	9			
Zeiss Otus 28mm f/1.4 ZE	£3500/$5000	Yes	None	No	f/1.4	1350g	0.3m	0.2x	95mm	9			
Zeiss Milvus 35mm f/2 ZE	£935/$1120	Yes	None	No	f/2	702g	0.3m	0.19x	58mm	9	141	★★★★	

PhotoPlus

BUYERS' GUIDE

Contacts

Canon www.canon.co.uk
Peleng www.digitaltoyshop.co.uk
Samyang www.samyang-lens.co.uk
Schneider www.linhofstudio.com
Sigma www.sigma-imaging-uk.com
Tamron www.tamron.co.uk
Tokina www.tokinalens.com
Zeiss www.zeiss.co.uk

KEY: ● BEST VALUE AWARD ● BEST ON TEST AWARD

STANDARD PRIMES

STANDARD PRIMES

	Price	Full-frame	Max zoom	Image stabilization	Max aperture	Weight	Min focus distance	Max magnification	Filter size	Iris blades	Issue reviewed	Rating	Awards
7Artisans 50mm f/1.05	£450/$486	Yes	None	No	f/1.05	606g	0.57m	0.13x	58mm	13	185	★★★★½	
Canon EF 40mm f/2.8 STM	£200/$180	Yes	None	No	f/2.8	130g	0.3m	0.18x	52mm	7	141	★★★★	
Canon TS-E 45mm f/2.8 (tilt & shift)	£1200/$1400	Yes	None	No	f/2.8	645g	0.4m	0.16x	72mm	8			
Canon EF 50mm f/1.2L USM	£1370/$1350	Yes	None	No	f/1.2	580g	0.45m	0.15x	72mm	8	103	★★★★	
Canon EF 50mm f/1.4 USM	£389/$400	Yes	None	No	f/1.4	290g	0.45m	0.15x	58mm	8	185	★★★	
Canon EF 50mm f/1.8 STM	£129/$126	Yes	None	No	f/1.8	160g	0.35m	0.21x	49mm	7	185	★★★★	●
Canon RF 50mm F1.2L USM	£2389/$2299	Yes	None	No	f/1.2	950g	0.40m	0.15x	77mm	10	185	★★★★½	
Canon RF 50mm F1.8 STM	£219/$200	Yes	None	No	f/1.8	160g	0.30m	0.25x	43mm	7	185	★★★★½	
Samyang 50mm f/1.4 AS UMC	£310/$350	Yes	None	No	f/1.4	575g	0.45m	N/S	77mm	8			
Sigma 30mm f/1.4 DC HSM A	£349/$499	No	None	No	f/1.4	435g	0.3m	0.15x	62mm	9	166	★★★★	
Sigma 50mm f/1.4 DG HSM A	£649/$949	Yes	None	No	f/1.4	815g	0.4m	0.18x	77mm	9	185	★★★★★	●
Tamron SP 45mm f/1.8 Di VC USD	£415/$549	Yes	None	Yes	f/1.8	540g	0.29m	0.29x	67mm	9	185	★★★★½	
Tokina Opera 50mm f/1.4 FF	£879/$949	Yes	None	No	f/1.4	950g	0.4m	0.18x	72mm	9	148	★★★★½	
Zeiss Milvus 50mm f/1.4 ZF.2	£1159/$1199	Yes	None	No	f/1.4	922g	0.45m	0.15x	67mm	9	185	★★★★½	
Zeiss Planar T* 50mm f/1.4 ZE	£560/$725	Yes	None	No	f/1.4	380g	0.45m	0.15x	58mm	9			
Zeiss Otus 55mm f/1.4	£2700/$3990	Yes	None	No	f/1.4	1030g	0.5m	0.15x	77mm	9			

TELEPHOTO PRIMES

TELEPHOTO PRIMES

Canon EF 85mm f/1.2L II USM	£1999/$1999	Yes	None	No	f/1.2	1025g	0.95m	0.11x	72mm	8	179	★★★★	
Canon EF 85mm f/1.4L IS USM	£1489/$1599	Yes	None	Yes	f/1.4	950g	0.85m	0.12x	77mm	9	179	★★★★★	●
Canon EF 85mm f/1.8 USM	£365/$369	Yes	None	No	f/1.8	425g	0.85m	0.13x	58mm	8	159	★★★★	
Canon RF 85mm F1.2L USM	£2869/$2699	Yes	None	No	f/1.2	1195g	0.85m	0.12x	82mm	9	179	★★★★★	●
Canon TS-E 90mm f/2.8 (tilt & shift)	£1240/$1400	Yes	None	No	f/2.8	565g	0.5m	0.29x	58mm	8			
Canon EF 100mm f/2 USM	£410/$500	Yes	None	No	f/2	460g	0.9m	0.14x	58mm	8	46	★★★★★	
Canon EF 135mm f/2L USM	£940/$1000	Yes	None	No	f/2	750g	0.9m	0.19x	72mm	8			
Canon EF 200mm f/2L IS USM	£5400/$5700	Yes	None	Yes	f/2	2520g	1.9m	0.12x	52mm	8	98	★★★★★	
Canon EF 200mm f/2.8L II USM	£700/$750	Yes	None	No	f/2.8	765g	1.5m	0.16x	72mm	8	98	★★★★	
Canon EF 300mm f/2.8L IS II USM	£5800/$6100	Yes	None	Yes	f/2.8	2400g	2.0m	0.18x	52mm	9	54	★★★★★	
Canon EF 300mm f/4L IS USM	£1140/$1350	Yes	None	Yes	f/4	1190g	1.5m	0.24x	77mm	8	117	★★★★	
Canon EF 400mm f/2.8L IS II USM	£9900/$10,000	Yes	None	Yes	f/2.8	3850g	2.7m	0.17x	52mm	9	54	★★★★★	
Canon EF 400mm f/4 DO IS II USM	£7000/$6900	Yes	None	Yes	f/4	2100g	3.3m	0.13x	52mm	9			
Canon EF 400mm f/5.6L USM	£1180/$1180	Yes	None	No	f/5.6	1250g	3.5m	0.12x	77mm	8	117	★★★½	
Canon EF 500mm f/4L IS II USM	£8400/$9000	Yes	None	Yes	f/4	3190g	3.7m	0.15x	52mm	9			
Canon EF 600mm f/4L IS II USM	£11,350/$11,500	Yes	None	Yes	f/4	3920g	4.5m	0.15x	52mm	9			
Canon RF 600mm F11 IS STM	£709/$699	Yes	None	Yes	f/11	930g	4.5m	0.14x	82mm	N/A	182	★★★★	
Canon EF 800mm f/5.6L IS USM	£11,900/$13,000	Yes	None	Yes	f/5.6	4500g	6.0m	0.14x	52mm	8			
Samyang MF 85mm f/1.4 RF	£319/$379	Yes	None	No	f/1.4	730g	1.1m	0.09x	72mm	8	179	★★★★	●
Samyang AF 85mm f/1.4 EF	£599/$699	Yes	None	No	f/1.4	485g	0.9m	0.11x	77mm	9	159	★★★★	
Samyang 135mm f/2 ED UMC	£370/$530	Yes	None	No	f/2	830g	0.8m	N/S	77mm	9			
Samyang 500mm MC IF f/6.3 Mirror	£125/$150	Yes	None	No	f/6.3	705g	2.0m	N/S	95mm	0			
Sigma 85mm f/1.4 DG HSM A	£929/$1099	Yes	None	No	f/1.4	TBA	0.85m	0.12x	86mm	9	179	★★★★½	
Sigma APO 300mm f/2.8 EX DG HSM	£2600/$3400	Yes	None	No	f/2.8	2400g	2.5m	0.13x	46mm	9	98	★★★★	
Sigma APO 500mm f/4.5 EX DG HSM	£3600/$4400	Yes	None	No	f/4.5	3150g	4.0m	0.13x	46mm	9			
Sigma 500mm f/4 DG OS HSM S	£5000/$6000	Yes	None	Yes	f/4	TBA	3.5m	0.15x	46mm	9	9		
Sigma APO 800mm f/5.6 EX DG HSM	£5000/$6600	Yes	None	No	f/5.6	4.9kg	7.0m	0.11x	46mm	9	21	★★★★	
Tamron SP 85mm f/1.8 Di VC USD	£750/$750	Yes	None	Yes	f/1.8	700g	0.8m	0.14x	67mm	9	159	★★★★½	
Zeiss Milvus 85mm f/1.4 ZE	£1380/$1800	Yes	None	No	f/1.4	1280g	0.8m	0.14x	77mm	9			
Zeiss Milvus 135mm f/2 ZE	£1900/$2200	Yes	None	No	f/2	1123g	0.8m	0.28x	77mm	9			

MACRO

MACRO

Canon EF-M 28mm f/3.5 Macro IS STM	£309/$299	No	None	Yes	f/3.5	130g	0.097m	1.2x	44.8mm	7	177	★★★★	
Canon EF-S 35mm f/2.8 Macro IS STM	£379/$349	No	None	Yes	f/2.8	190g	0.13m	1.0x	56mm	7	177	★★★★	
Canon EF-S 60mm f/2.8 Macro USM	£399/$350	No	None	No	f/2.8	335g	0.20m	1.0x	52mm	7	164	★★★½	
Canon MP-E65mm f/2.8 1-5x Macro	£980/$1050	Yes	None	No	f/2.8	710g	0.24m	5.0x	58mm	6	50	★★★★	
Canon EF 100mm f/2.8 Macro USM	£499/$599	Yes	None	No	f/2.8	600g	0.31m	1.0x	58mm	8	177	★★★★	
Canon EF 100mm f/2.8L Macro IS USM	£999/$1299	Yes	None	Yes	f/2.8	625g	0.3m	1.0x	67mm	9	184	★★★★½	
Canon EF 180mm f/3.5L Macro USM	£1330/$1400	Yes	None	No	f/3.5	1090g	0.48m	1.0x	72mm	8	69	★★★★	
Canon RF 85mm F2 Macro IS STM	£649/$599	Yes	None	Yes	f/2	500g	0.35m	0.5x	67mm	9	184	★★★★★	
Canon RF 100mm F2.8L Macro IS USM	£1479/$1399	Yes	None	Yes	f/2.8	730g	0.3m	1.4x	67mm	9	184	★★★★★	●
Laowa 100mm f/2.8 2:1 Ultra Macro APO	£469/$399	Yes	None	No	f.2.8	638-650g	0.25m	2.0x	67mm	7-13	184	★★★★	
Sigma 70mm f/2.8 DG Macro Art	£449/$569	Yes	None	No	f/2.8	515g	0.26m	1.0x	49mm	9	184	★★★★½	
Sigma 105mm f/2.8 EX DG OS HSM Macro	£359/$619	Yes	None	No	f/2.8	725g	0.31m	1.0x	62mm	9	184	★★★★½	●
Sigma APO Macro 150mm f/2.8 EX DG OS HSM	£780/$1100	Yes	None	Yes	f/2.8	1150g	0.38m	1.0x	72mm	9	138	★★★★½	
Sigma APO Macro 180mm f/2.8 EX DG OS HSM	£1250/$1700	Yes	None	Yes	f/2.8	1640g	0.47m	1.0x	86mm	9	102	★★★★	
Tamron SP AF 60mm f/2 Di II LD (IF) Macro	£350/$525	No	None	No	f/2	350g	0.23m	1.0x	55mm	7	138	★★★½	
Tamron SP AF 90mm f/2.8 Di Macro	£350/$500	Yes	None	No	f/2.8	400g	0.29m	1.0x	55mm	9	102	★★★	
Tamron SP AF 90mm f/2.8 Di VC USD Macro	£649/$649	Yes	None	Yes	f/2.8	610g	0.3m	1.0x	62mm	9	184	★★★★★	
Tamron SP AF 180mm f/3.5 Di Macro	£800/$740	Yes	None	No	f/3.5	985g	0.47m	1.0x	72mm	7	69	★★★	
Tokina 100mm f/2.8 AT-X PRO Macro	£399/$429	Yes	None	No	f/2.8	540g	0.3m	1.0x	55mm	9	184	★★★★	
Zeiss Milvus Makro Planar 100mm f/2 ZE	£1300/$1840	Yes	None	No	f/2	843g	0.44m	0.5x	67mm	9	50	★★★★	

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- Lens test: Canon RF 16mm F2.8 STM

ISSUE 187 ON SALE 11 JANUARY 2022

* Content subject to change

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LAST MONTH

Issue 185
December 2021

NIGHT PHOTOGRAPHY GUIDE Learn to shoot it all after dark from cities and astro to landscapes and nature • Control colour in-camera and get more creative • Christmas gift guide! Get new gear for that special photographer in your life – or yourself! • Our Apprentice is treated to a VIP Longleat safari experience, learning how to photograph big cats • Take a deep dive into the bag of a professional fashion and beauty photographer • It's all about that natural perspective with fast 50mm prime lenses. Find out which is the best for you in our Super Test • Astounding Canon entries from the Bird Photographer of the Year competition • So much more to sink your teeth into

Issue 184
November 2021

MAKE THE MOVE TO FULL-FRAME Your complete guide to Canon's full-frame cameras from DSLRs to mirrorless • Get magnificent macro photos with our Canon pro and Apprentice • Christian Anderl tells us about beating cancer and how his portfolio continues to thrive • Get up close and personal with these perfect primes lenses we've tested • Canon photo projects galore and video gudies

Issue 183
October 2021

AUTUMN SKILLS SPECIAL Prepare for every amazing aspect of Autumn, using our excellent Autumn skills guide • What if you're stuck closer to home for your holidays? We've got you covered with our Apprentice showing how you can shoot better shots closer to home • Ensure that you have the fastest flashgun in the world with our expansive Super Test • Our exclusive interview with Tom Martin

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Issue 182
September 2021

SUMMER PHOTO SKILLS No matter where your Summer holidays take you, make sure you're photographically prepared • Shoot amazing architecture with out Apprentice • Need to get a closer look of the action? You need of the telephoto zoom lenses we've tried and tested • Pro Canon photographer Emmett Sparling talks about his expansive portfolio • Canon projects to keep you busy

Issue 181
August 2021

SHOOT LIKE A PRO Get a first-hand look at how pro photographers get money-making imagery • Get back out and shooting steady with our Super Test of lightweight tripods • Find out how you can take great portraits on location with our Apprentice on the streets of London • Take our Canon School class on flash photography • We test several portable SSDs to see which you should be storing your portfolio

Issue 180
July 2021

21 CANON TRICKS & FAST FIXES Quickly raise your Canon photography game with our shortcuts • Pro wildlife safari photographer Clement Kiragu • Ready to get back out? We test 10 lightweight fast prime lenses • Shoot awesome landscapes with our Apprentice in the Lake District • A close encounter over the expansive dunes of Namibia? It can only be our fearless regular Canon columnist, David Clapp

Issue 179
June 2021

MAKE THE MOVE TO MIRRORLESS Instantly improve your photography with Canon's EOS R cameras and RF lenses • In our new Canon School series find out how to get the best out of your Canon gear • Join our Apprentice and learn how to shoot pedigree pet photos • Canon EOS M50 Mk II tested • Super Test of eight fast prime lenses • Fantastic photo projects to keep you busy for another month

Issue 178
May 2021

LOCAL WILDLIFE PHOTOGRAPHY SKILLS Get back out into the great outdoors and photograph local wildlife with our expansive guide • Print off your most prized shots with this list of the best printers on the market right now • Discover how you can shoot ace action photographs of cars • Find out how you can control your Canon camera remotely for hands-free remote pictures

Issue 177
Spring 2021

TAKE OUR CANON CRASH COURSE Essential tips for all skill levels from beginners to pros • Eight macro lenses go head-to-head in our Super Test • Pro Canon food photographer JP Baudey shows our Apprentice how to capture delightful food imagery • Canon photographer Timothy Allen's colourful career • Photo projects with videos to follow, including how to take portraits of your pets

Issue 176
April 2021

MASTER LANDSCAPE PHOTOGRAPHY Learn how to take better landscape photos in 12 hours with Canon pro Damian Waters • Canon pro Chris Grimmer shows our Apprentice how to capture out-of-this-world shots of starry night skies • Canon sports pro Molly Darlington talks about pursuing her passion for football • We test the best wide-angle zooms on the market to see which you need

Issue 175
March 2021

ULTIMATE NIGHT PHOTOGRAPHY GUIDE Four Canon pros give their tips and tricks on how to shoot at night while not being left out in the dark • Embrace lockdown and learn to capture creative close-ups in your own home with minimal photography kit and cost • We speak to active documentary photographer Timo Stammberger on why animal photojournalism is starting to make an impression

Issue 174
February 2021

NEW YEAR NEW CANON SKILLS Embrace 2021 and discover what techniques you can use to take your photography up a notch • We tackle the freezing cold to help you shoot your best winter photos yet • Shoot amazing seascapes with our Canon pro and apprentice • Time for the Gear of the Year awards • Pro wildlife photographer Mark Carwardine talks about his great portfolio and career

Issue 173
January 2021

THINKING OF GOING MIRRORLESS? Check out our complete guide to the Canon EOS R System cameras and RF lenses, including the pros and cons, so you're fully informed before investing • Our Canon pro teaches our Apprentice how you can take brilliant shots of buildings in your local area • Find a gift for that special photographer in your life with our Canon gear Christmas gift guide!

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RF 100-500mm F4.5/7.1 L IS USM	£2979
RF 400mm F2.8 L IS USM	£12449
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- EOS 600 body £39
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- EOS 300 / 50E / 500N body each £39
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FOCUSPOINT

We'd love to hear your thoughts on the magazine and all things photographic! Email us at photoplus@futurenet.com

Letter of the Month

I've been a subscriber to *PhotoPlus* for several years. I am a French man living in Belgium since 1982. I'm now 66 years old, but have been taking photos since I was 14. After using Minolta SRT101 & X300, Canon EOS 10, 5 and 3, I switched in 2012 to a full-frame digital DSLR, with a Canon 5D Mk III, and then a 5D Mk IV in 2020.

Following David Nelson's letter in issue 185, I totally agree with him. Beyond the high quality of the current full-frame EOS mirrorless cameras, the absence of optical viewfinders (even if the electronic viewfinders have real advantages at times) and the price represents a real barrier to switching to mirrorless camera bodies.

In addition, the need (not mandatory, but preferable) to replace EF with RF optics also poses a problem when you have invested in several Canon EF L-series and Sigma lenses, like me.

I'm conscious that this 'battle' between DSLRs and mirrorless is already lost. Indeed, brands heavily invested in this technology which is easier to achieve (less moving parts, less constraints, easier and more efficient software developments than electro-mechanical ones) and therefore will no longer support the world of DSLRs.

On the other hand, for many years, a lot of pro, semi-pro and, above all, amateur photographers like me will continue to use our EOS DSLRs.

Lionel Sombré, Brussels, Belgium

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The month in numbers

500mm

Wildlife photographer Jayne Bond says her Canon EF 500mm f/4L IS II USM is the best investment she's ever made – Page 72

20

PhotoPlus Apprentice Emily used a 20 sec shutter speed to blur waters in a scene in Scotland – Page 17

77

great gear gifts, Canon cameras, lenses, and stocking-fillers for those not on the naughty list! Page 28

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Image: Canon

Buying guide: the best Canon printers

Looking for the best Canon printer? This guide will take you through the range, help you decide on the one for you, and find you the best available price right now on our popular site DigitalCameraWorld.com via quick link **bit.ly/canon_printers**

Image: Getty

Tom Stoddart 1953-2021: award-winning photojournalist in his own words

One of the best photojournalists of his time, Tom Stoddart died aged 68. To remember his 50 years here's an interview with Tom from earlier this year on DigitalCameraWorld.com via quick link **bit.ly/tom_stoddart**

Image: Future

The best Christmas gifts for Canon photographers in 2021

We reveal our top picks for perfect presents and that won't break the bank for Canon users (and yourself, of course!) this Christmas. Find out more on DigitalCameraWorld.com via quick link **bit.ly/canongifts**

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